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U. S. DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS
ROYAL MEEKER, Commissioner

BULLETIN OF THE UNITED STATES BUREAU OF LABOR STATISTICS . . . WHOLE NUMBER 139

CONCILIATION AND ARBITRATION SERIES: No. 3

MICHIGAN COPPER DISTRICT STRIKE

FEBRUARY 7, 1914

WASHINGTON
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SERIES OF BULLETINS PUBLISHED BY THE BUREAU OF LABOR STATISTICS.

The publication of the Annual and Special Reports and of the bimonthly Bulletin has been discontinued, and since July, 1912, a Bulletin has been published at irregular intervals. Each number contains matter devoted to one of a series of general subjects. These Bulletins are numbered consecutively in each series and also carry a consecutive whole number, beginning with No. 101. A list of the series, together with the individual Bulletins falling under each, is given below. A list of the Reports and Bulletins of the Bureau issued prior to July 1, 1912, will be furnished on application.

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No. 6. Wages and hours of labor in the building and repairing of steam railroad cars, 1890 to 1912. (Bul. No. 137.)

Women in Industry.

No. 1. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia. (Bul. No. 116.)

No. 2. Working hours of women in the pea canneries of Wisconsin. (Bul. No. 119.)

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Workmen's Insurance and Compensation (including laws relating thereto).

No. 1. Care of tuberculous wage earners in Germany. (Bul. No. 101.)

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No. 3. Sickness and accident insurance law of Switzerland. (Bul. No. 103.)

No. 4. Law relating to insurance of salaried employees in Germany. (Bul. No. 107.)

No. 5. Workmen's compensation laws of the United States and foreign countries. (Bul. No. 126.)

[See also third page of cover.

U. S. DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS
ROYAL MEEKER, Commissioner

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LETTER OF TRANSMITTAL.

DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, January 29, 1914.

SIR: In compliance with the resolution of the Senate of January 29, 1914, I transmit herewith a report in regard to the strike of mine workers in the Michigan copper district which began on July 23, 1913. This report includes the results of an investigation made under the direction of the Commissioner of Labor Statistics, together with reports of the efforts made by Mr. John A. Moffitt and Mr. John B. Densmore, as mediators in behalf of the Department of Labor to secure an adjustment of the dispute either by mediation or arbitration.

Respectfully,

W. B. WILSON, *Secretary.*

Hon. THOMAS R. MARSHALL,
President of the Senate, Washington, D. C.

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BULLETIN OF THE

U. S. BUREAU OF LABOR STATISTICS.

WHOLE NO. 139. WASHINGTON. SEPTEMBER 7, 1914.

REPORT OF THE COMMISSIONER OF LABOR STATISTICS IN REGARD TO STRIKE OF MINE WORKERS IN THE MICHIGAN COPPER DISTRICT.

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, November 24, 1913.

SIR: I transmit herewith a report containing the results of an investigation into the strike of mine workers in the Michigan copper district, begun on July 23, 1913. The investigation has been carried on by Mr. Walter B. Palmer of this Bureau, and the text of the report has been prepared by him.

I am, very respectfully,

ROYAL MEEKER,
Commissioner of Labor Statistics.

SECRETARY OF LABOR,
Washington, D. C.

INTRODUCTION.

This report relates to a strike of mine workers which began on July 23, 1913, in the Michigan copper district. The principal cause of the strike was dissatisfaction with regard to wages, hours of labor, and the use of the one-man drill instead of the two-man drill. The strikers were members of the Western Federation of Miners, which was established in the district in 1909, and which in 1913 had five local unions in the district. In these local unions there was a referendum vote, during the first 12 days in July, on the question of asking for a conference with the mine managers and on the question of declaring a strike if the managers should refuse to grant a conference or make concessions. The officials of the Western Federation of Miners state that at that time it had nearly 9,000 members in the district, and that 98 per cent of the votes cast were in the affirmative on each of the two propositions.

On July 14 the president and secretary of the district union, composed of the five local unions, sent a communication to the mine managers which stated that they hoped "to sell their labor collectively," and that they desired to have a conference with the managers to discuss "the possibilities of shortening the working day, raising wages, and making some changes in the working conditions." The communication stated that, as ordered by a referendum vote, a strike would be called unless the managers should agree to a conference or make concessions, and replies were requested by July 21. None of

the managers replied to the communication, because they considered that by doing so they would recognize the Western Federation of Miners. At a meeting of the district union on July 22 a strike was called, to take effect immediately.

Every mine in the district was closed on July 23, except two of the very small mines. Including the strikers, about 14,500 mine workers were made idle by the strike. The mines being closed, work was necessarily stopped in the stamp mills and smelters, which had about 1,500 employees.

During the first two days of the strike there was much rioting, occasioned by members of the federation attempting to prevent nonunion men from going to work. Sixteen men employed by one of the companies were injured and taken to the company's hospital. The sheriff of Houghton County called on the governor of Michigan for troops to quell disorder. The governor ordered troops to the district and they began to arrive on July 25. Within two days the whole National Guard of the State, over 2,600 men, had arrived. They encamped in tents on the property of the various companies.

In addition to the militia, there were during the strike about 1,700 deputy sheriffs, about 450 of whom had been appointed before the strike began. Many of these deputies were employees of the companies. The sheriff of Houghton County engaged 52 men from the Waddell-Mahon Corporation of New York to train these deputies. From this corporation one of the mining companies engaged 32 men and another company 25 men. Another company secured about 120 men from the Ascher Detective Agency of New York. The bringing in of these outside guards incensed the strikers more than anything else that happened during the strike.

The strikers hired halls, held public and private meetings, and had daily parades at the various mine locations. They were addressed by officials of the Western Federation of Miners, the United Mine Workers of America, and the American Federation of Labor. These organizations raised relief funds for the benefit of the strikers, and payment of strike benefits began in September.

After the first two days of the strike there was little disorder until the middle of August, when work was resumed in some of the mines of one of the companies. Many strikers were arrested for interfering with men going to work. Some were arrested charged with more serious crimes, but of cases tried in the circuit court no defendant was convicted of a more serious offense than assault. A number of mines were opened in September and October, and some of the companies brought in men to work in the mines who were engaged through employment agencies in New York, Chicago, and other places. Some of these men did not go to work when they learned of the strike, and others quit after working a few days.

A striker was shot in both legs by a corporal because of neglect to obey an order to halt. A private was waylaid by unknown parties, and so badly beaten that he was unconscious for hours. In attempting to arrest a striker for having trespassed on company property, two deputies and four Waddell-Mahon men shot into a mine workers' boarding house and killed two and wounded two of the strikers. In a clash between deputy sheriffs and strikers shots were fired by the

former. One of these shots entered the brain of a girl, and her recovery was considered marvelous. In a fight between a deputy sheriff and a striker both were killed. A clerk of one of the companies, while passing a group of strikers, was shot at twice, one shot going through his body. These were the most serious cases of violence during the strike. No attempt was made by the strikers to damage property.

Some troops were stationed in Keweenaw County but none in Ontonagon County. In these counties there was little disorder, and practically none until October, when some of the mines were reopened.

Most of the parades of the strikers were timed to pass the mines and mine villages at the hour in the morning when men started to work. On application of the mining companies, the judge of the State circuit court issued an injunction, which restrained the strikers from interfering with men who wished to go to work, from picketing in or about the mines, and from parading on highways over which employees had to pass to reach their homes or the mines. This injunction was issued on September 20, but the same judge that had issued it dissolved it on September 29. On application of the companies, the State supreme court reinstated and continued the injunction, but modified it to the extent that peaceful meetings and parading were not prohibited. After this several hundred strikers and 50 or more women were arrested for violation of the injunction. Most of them were arrested while they were on early morning parades. Most of these arrests were made by the militia. Those arrested were held on their own recognizance.

The mine managers refused to confer with members of the Western Federation of Miners, and in reemploying men required them to promise to have no connection with that organization. Two attempts to bring about an arbitration of the questions involved in the strike were made by the governor and one by the United States Department of Labor. The companies refused all arbitration proposals, because of their determination not to recognize the Western Federation of Miners directly or indirectly. In October a committee, appointed by the Copper Country Commercial Club, made a report, which discussed the matters in controversy and announced that the mine managers had agreed that they would, by January 1, 1914, arrange that underground men should work only eight hours per shift. The report also stated that the mine managers had agreed to give opportunity for the presentation of all grievances, and to appoint a day or half a day each week for hearing and adjusting grievances.

CAUSES OF THE STRIKE.

Dissatisfaction regarding wages, hours of labor, and the use of the one-man drill was the principal cause of the strike of mine workers which began in the Michigan copper district on July 23, 1913. These and other grievances are discussed in subsequent sections of this report.

No definite demands were made by the mine workers before the strike began, except that the local officers of the Western Federation

of Miners sent a communication to the mine managers, informing them that their employees organized into local unions of the federation desired to hold a conference with them "for the purpose of discussing the possibilities of shortening the working day, raising wages, and making some changes in the working conditions." The managers considered that if they should grant such a conference, or even reply to this communication, it would be giving recognition to the federation.

The copper-mine workers in Michigan, comparing their earnings with those of the copper-mine workers in Montana, found that in Michigan the rate of pay was much less than miners earn in Montana, where the Western Federation of Miners was strongly organized. While the average earnings per shift of mine workers in Michigan are less than the average of such workers in Montana the shift hours are longer in Michigan. This is true especially of trammers, timber men, and track layers.

In the Michigan district all underground workers are under ground from 10 to 11 hours a day or night shift, this including 1 hour for luncheon. On Saturday in Michigan the miners on day shift work 5½ hours, but there is no night shift, while trammers work 8½ hours, both day and night shift, including 1 hour for luncheon. The time stated for all underground workers in Michigan includes the time required for going to the working places and returning to the surface.

In Montana the Western Federation of Miners has contracts with the mining companies which stipulate that the time of each shift shall be 8½ hours, including half an hour allowed for luncheon, and including the time required to go from the surface to the working places, but not the time required to return to the surface.

The contracts stipulate that the minimum wages or earnings of underground men, whether engaged in mining, tramming, timbering, tracklaying, or other work, shall be $3.50 per day, on the basis of the price of copper being less than 15 cents a pound; and if copper is selling at 15 and under 17 cents, the minimum shall be $3.75; and if it is selling at 17 cents or over, the minimum shall be $4.

A copy of one of the Montana contracts appears in the appendix to this report. The sliding scale of minimum wages is based on the monthly average price of electrolytic copper, as published in the Mining and Engineering Journal of New York. According to this journal the average price was below 15 cents a pound in January, February, and March, 1912; over 15 and under 17 cents in May and June, 1912; over 17 cents from July to December, inclusive, 1912; over 15 and under 17 cents in January, 1913; under 15 cents in February and March, 1913; over 15 and under 17 cents in April and May, 1913; under 15 cents in June and July, 1913; over 15 and under 17 cents in August and September, 1913.

In the Michigan copper district the mine workers have never had any contracts with the mining companies other than such terms as were fixed by the companies, and the companies have never stipulated in regard to a minimum wage. In some mines in this district miners on day or night shifts are paid as low as $2.35 per shift, while trammers are paid as low as $2.

No investigation was made of the earnings of mine workers in Montana. The minimum wage there is considerably higher than the average earnings in the Michigan copper district, but the earnings in the two districts could not be well compared without taking into account the cost of living in each district, which was not ascertained in this investigation.

WAGES OF MINE WORKERS.

Each of the companies involved in the strike was requested to state what increases had been made in wages or in contract rates during recent years, back to 1900, if possible. One of the most definite statements was made by the Calumet & Hecla Mining Co., which reported that its wages and rates had been changed as follows: March, 1899, a raise of 10 per cent; January, 1901, a raise of 2½ per cent; May, 1907, a raise of 10 per cent; December, 1907, a cut of 10 per cent; May, 1912, a raise of 10 per cent. Some of these changes were made by other companies on or about the months mentioned. Practically all of the companies in the district increased wages and contract prices 10 per cent in May, 1912.

Some miners work "on company account" or monthly basis, but many work on a contract basis. Contracts were formerly let on the basis of a cubic fathom of rock mined, but now they are usually let on the basis of tons mined. In no mines is the rock actually weighed, but the pay of contract miners is figured on the number of tramcar loads of rock which they blast out and which the trammers push to the shaft. In each mine the dimensions of the tramcars are the same, but the load, of course, depends on how fully they are filled or how much they are heaped. The miners seem to have accepted without much complaint this method of estimating their production, though it is rather surprising that such a crude method has not caused dissatisfaction.

Most of the mine managers who prefer the contract system, or prefer it if practicable, state that they prefer it because it gives an efficient miner an opportunity to increase his earnings above the regular monthly rate. Many miners also prefer the contract system because they can earn more by that system than by the ordinary monthly rate. All pay rolls that were examined showed that the average earnings of the miners and trammers on contract were greater than the average earnings of those paid by the month. However, complaints are heard among certain contract miners because during some months their earnings would be unusually low on account of the poor rock mined, or some other run of bad luck. Contract rates are sometimes fixed by the mine captain (foreman), but more generally by him and the superintendent or general manager. Monthly wages are always determined by the management.

The only mine workers that work on contract are miners and trammers. The following table shows the number of miners and trammers working on contract and monthly bases in July, 1913, just

before the strike began, and shows which system the mine managers prefer, according to their own statements:

Mine.	Miners on—		Trammers on—		Contract basis or shift basis preferred by management.
	Contract basis.	Monthly basis.	Contract basis.	Monthly basis.	
Ahmeek	138	.....	75	42	Contract.
Allouez	79	2	94	2	Do.[1]
Calumet & Hecla	652	60	[2]	[2]	Do.
Copper Range	[2]	[2]	[2]	[2]	Do.[1]
Centennial	26	2	17	.....	Do.[1]
Franklin	11	43	.....	42	Do.
Hancock	.....	47	.....	29	Shift.
Isle Royale	56	93	.....	157	Contract.[1]
Lake	6	34	.....	25	Do.
La Salle	.....	6	.....	[3]	Do.
Laurium	[4]	.....	.....	[3]	Do.
Mass	.....	38	.....	31	[5]
Mohawk	225	14	.....	126	Contract
Oneco	.....	9	.....	3	Shift.
Osceola	56	2	.....	[6]296	Contract.
North Kearsarge	94	2	.....	.....	Do.[1]
South Kearsarge	34	42	.....	.....	Do.[1]
Quincy	140	500	.....	200	Do.[1]
Superior	22	16	32	.....	Do.[1]
Tamarack	73	38	.....	77	Do.
Winona	64	18	.....	[3]	Do.[1]
Houghton	.....	[3]	.....	[3]	Do.[1]
Wolverine	98	.....	.....	86	Do.[1]
Total	[7]1,774	[8]966	[9]218	[10]1,116	
Per cent of total	64.74	35.36	16.34	83.66	

[1] When practicable.
[2] Not reported.
[3] All on shift basis; number not reported.
[4] All on contract basis; number not reported.
[5] Would have to be determined by trial.
[6] North Kearsarge and South Kearsarge included.
[7] Not including Copper Range and Laurium.
[8] Not including Copper Range and Houghton.
[9] Not including Calumet & Hecla and Copper Range.
[10] Not including Calumet & Hecla, Copper Range, La Salle, Laurium, Winona, and Houghton.

Of the total number of miners, 2,740, reported on either contract or monthly basis, 1,774, or 64.74 per cent, were on contract basis, and 966, or 35.26 per cent, on monthly basis. Of the total number of trammers, 1,334, reported on either contract or monthly basis, 218, or 16.34 per cent, were on contract basis, and 1,116, or 83.66 per cent, on monthly basis. Until January 1, 1913, a curious custom prevailed in all of the mines in the Michigan copper range, and it prevails yet in all mines except those of the Calumet & Hecla and its subsidiary companies. Miners that work full five and one-half day shifts or full five-night shifts are paid on the basis of having worked six shifts. Paying miners on this basis is an old Cornish custom imported into Michigan years ago. On January 1, 1913, this custom was modified by the Calumet & Hecla and its subsidiary companies, and these companies have since paid miners on night shifts for only five shifts a week, though they continue to pay miners on day shifts on the basis of having worked six shifts a week. On the same date these companies increased the rate of pay of miners "on company account" 25 cents per shift. In analyzing the tables relating to wages that follow, it is necessary to bear the old Cornish custom in mind.

An examination of the pay rolls of the mining companies involved in the strike of 1913 (except of a few companies having very small mines) was made by agents of the Bureau of Labor Statistics, and, from the figures thus secured, the tables which follow were compiled. These tables relate to the earnings of miners and trammers who together compose about half of the mine workers and who comprised the greater number of mine workers that went out on strike. All earnings shown in these tables are what the employees received after deductions had been made for materials used in the mines, such as powder, caps, fuse, and carbide, but not including deductions for medical attention, aid fund, rent, fuel, etc.

The following table shows the average number and average earnings of miners employed by each company during the 12 months prior to July, 1913, in which month the strike began:

Average daily earnings of miners, year ending June 30, 1913.

Mining company.	Six months ending Dec. 31, 1912.		Six months ending June 30, 1913.		Total for year ending June 30, 1913.	
	Average number of men.	Average earnings per day or shift.	Average number of men.	Average earnings per day or shift.	Average number of men.	Average earnings per day or shift.
No. 1. Calument & Hecla	908	$3.22	754	$3.60	831	$3.39
No. 2. Osceola	83	2.99	81	3.44	82	3.21
No. 3. North Kearsarge	158	3.26	120	3.59	139	3.40
No. 4. South Kearsarge	99	2.77	85	3.03	92	2.89
No. 5. Isle Royale	256	2.79	212	3.13	234	2.94
No. 6. Ahmeek	178	3.01	137	3.56	158	3.25
No. 7. Tamarack	134	3.24	123	3.37	129	3.30
No. 8. Allouez	134	2.95	95	3.60	114	3.22
No. 9. Superior	51	3.58	47	3.55	49	3.57
No. 10. Centennial	40	2.75	34	3.49	37	3.09
No. 11. La Salle			1	3.98		
No. 12. Laurium	9	3.86	6	3.26	7	3.62
Total, Nos. 1 to 12	2,050	3.11	1,695	3.48	1,872	3.28
No. 13	320	2.69	281	2.70	301	2.69
No. 14	200	2.37	186	2.71	193	2.69
No. 15	365	2.67	369	2.68	367	2.68
No. 16	670	2.75	634	2.79	652	2.77
No. 17	308	2.84	253	2.81	281	2.83
No. 18	125	2.83	107	2.86	116	2.84
No. 19	112	2.71	114	2.57	113	2.64
No. 20	106	2.91	100	2.88	103	2.90
No. 21						
No. 22	58	2.49	[1] 55	[1] 2.48	[2] 57	[2] 2.48
No. 23	43	2.98	48	2.66	46	2.81
No. 24	13	2.61	10	2.61	12	2.61
No. 25	36	2.63	39	2.63	38	2.63
Total, Nos. 13 to 25	2,356	2.74	[1] 2,196	[1] 2.78	[2] 2,279	[2] 2.74
Total, all companies	4,406	2.91	[1] 3,891	[1] 3.08	[2] 4,151	[2] 2.93

[1] 5 months; mine idle in May, 1913.

[2] 11 months; mine idle in May, 1913.

The average number of miners was found for this table by dividing the total number of shifts worked, as shown on the pay rolls, by the number of shifts that the mine was operated during each six-month period. In each of the tables that follow a similar method was adopted to find the average number of miners and trammers.

The first company shown in the preceding table is the Calumet & Hecla Mining Co., and its subsidiary companies are numbered 2 to

12. Other companies reporting are numbered 13 to 25. The earnings of miners employed during the year by the Calumet & Hecla and subsidiary companies varied from $2.89 to $3.62 per shift and averaged $3.28. The earnings of miners employed during the year by the other companies varied from $2.48 to $2.90 per shift and averaged $2.74. The general average for all companies during the year was $2.98.

Miners do not work Saturday afternoons, hence in a month of 30 days without holiday they work only 23 shifts. But under the old Cornish custom their shift rate is computed by dividing their monthly rate by 26, because under this custom miners that work 5½-day shifts a week or 5 night shifts a week are counted as having worked 6 shifts. In other words, the monthly rate of "company account" miners is divided by 26 to arrive at the shift rate, and if a miner is absent 1 day one twenty-sixth of his monthly rate is deducted from his pay; if he is absent 2 days, two twenty-sixths of his monthly rate is deducted. If he works an extra shift on overtime work or in a month of 31 days, he is paid one twenty-sixth more than his monthly rate.

The shift rate is thus computed from the monthly rate by all companies except the Calumet & Hecla and its subsidiary companies. Prior to January 1, 1913, the Calumet & Hecla and subsidiary companies followed the old Cornish custom, and divided the monthly rate by 26 to obtain the shift rate, but since then they have divided the monthly rate by 24 instead of 26. They did this because they stopped counting night-shift miners, who work 5 shifts a week, as having worked 6 shifts, though they continued to count day-shift miners who work 5½ shifts a week as working 6 shifts. This, in part, explains why the average shift rate of miners of the Calumet & Hecla and subsidiary companies was higher during the first 6 months of 1913 than it was during the last 6 months of 1912. Another reason given by the company for this increase is the increased amount of contract mining, and still another reason assigned is the increased use of the one-man drill.

It should be understood that there has been no change in the time that miners work. If they work full time they actually work 23 shifts (counting two half shifts on Saturday forenoons as one shift) in a month of 30 days without holidays.

In computing the rate per shift for contract miners, their earnings for the month are divided by the actual number of shifts that they worked, but with the Calumet & Hecla and subsidiary companies Saturday half shifts are counted as full shifts, and with the other companies Saturday half shifts are counted as full shifts, and an extra shift on Saturday night is counted.

The different methods of computing the shift rate should be considered in comparing the rates shown in the table that are paid by the Calumet & Hecla and subsidiary companies with the rates that are paid by the other companies. The rates for the first 6 months in 1913 can be put on an equal basis only by multiplying the shift rates of the Calumet & Hecla and subsidiary companies by 24 and dividing by 26, or by multiplying the shift rates of the other companies, as they appear in the table, by 26 and dividing them by 24.

If the average shown in the table for miners employed by the Calumet & Hecla and subsidiary companies during the first 6 months

in 1913, $3.48 per shift, be multiplied by 24 and divided by 26, the result is $3.21 per shift, as compared with $2.78 per shift paid by other companies on the same basis.

If, however, the earnings per shift are calculated on the time actually worked—that is, on the basis of 23 shifts—the average shift rate is increased above that which is shown in the table. Taking the earnings of miners employed by the Calumet & Hecla and subsidiary companies during the first 6 months of 1913 and multiplying the average shift rate shown in the table by 24 and dividing by 23, the result is $3.63 per shift instead of $3.48. Taking the earnings of miners employed by the other companies during the same period and multiplying the average shift rate shown in the table by 26 and dividing by 23, the result is $3.14 per shift instead of $2.78.

The following table shows the average number and average earnings of trammers employed by each company during the 12 months prior to July, 1913, in which month the strike began.

Average daily earnings of trammers, year ending June 30, 1913.

Mining company.	Six months ending Dec. 31, 1912.		Six months ending June 30, 1913.		Total for year ending June 30, 1913.	
	Average number of men.	Average earnings per day or shift.	Average number of men.	Average earnings per day or shift.	Average number of men.	Average earnings per day or shift.
No. 1. Calumet & Hecla	609	$2.84	539	$2.99	570	$2.91
No. 2. Osceola	62	2.54	71	2.54	67	2.54
No. 3. North Kearsarge	138	2.54	132	2.54	135	2.54
No. 4. South Kearsarge	95	2.54	87	2.54	91	2.54
No. 5. Isle Royale	138	2.55	131	2.57	135	2.55
No. 6. Ahmeek	132	2.73	115	2.85	124	2.78
No. 7. Tamarack	111	2.75	95	2.76	103	2.75
No. 8. Allouez	94	2.68	103	2.73	98	2.70
No. 9. Superior	48	2.62	30	3.14	39	2.82
No. 10. Centennial	26	2.61	29	2.70	28	2.66
No. 11. La Salle	.....	.....	2	2.46	.....	.....
No. 12. Laurium	3	2.53	2	2.46	2	2.50
Total, Nos. 1 to 12	1,447	2.71	1,336	2.80	1,392	2.75
No. 13	169	2.31	135	2.31	152	2.31
No. 14	77	2.31	72	2.32	74	2.32
No. 15	175	2.31	[1] 143	[1] 2.31	[2] 160	[2] 2.31
No. 16	207	2.51	199	2.51	203	2.51
No. 17	189	2.53	161	2.55	175	2.54
No. 18	103	2.50	94	2.49	98	2.49
No. 19	68	2.20	64	2.40	66	2.30
No. 20	95	2.38	90	2.38	92	2.38
No. 21	.....	.....	.....	.....	.....	.....
No. 22	55	2.31	[3] 50	[3] 2.30	[4] 53	[4] 2.30
No. 23	24	2.46	25	2.27	24	2.36
No. 24	4	2.36	3	2.54	3	2.43
No. 25	36	2.31	34	2.31	35	2.31
Total, Nos. 13 to 25	1,202	2.40	[5] 1,070	[5] 2.41	[6] 1,135	[6] 2.40
Total, all companies	2,649	2.57	[5] 2,406	[5] 2.63	[6] 2,527	[6] 2.59

[1] 5 months; not including June, 1913.
[2] 11 months; not including June, 1913.
[3] 5 months; mine idle in May, 1913.
[4] 11 months; mine idle in May, 1913.
[5] Including 2 companies reporting for 5 months.
[6] Including 2 companies reporting for 11 months.

As the Cornish custom has never been applied to trammers, a simpler explanation can be made of the table that relates to trammers than of the table that relates to miners. The rates per shift are figured on the same basis for all companies. The monthly earnings

of contract trammers are divided by the actual number of shifts that they worked, and the monthly wages of "company account" trammers are divided by 26 or 27, since they work, when working full time, 26 shifts in a 30-day month and 27 shifts in a 31-day month, the Saturday shifts, day or night shifts, being two hours shorter than the shifts on other days.

As shown by the table, the earnings of trammers employed during the year by the Calumet & Hecla and subsidiary companies varied from $2.50 to $2.91 per shift and averaged $2.75; the earnings of trammers employed during the year by the other companies varied from $2.30 to $2.54, and averaged $2.40; and the general average for all companies during the year was $2.59.

From the pay rolls of the various companies agents of the Bureau of Labor Statistics obtained the monthly rates of all miners and trammers working on "company account" during May, 1913, and the earnings and number of shifts worked by each contract miner and trammer during that month. From the data thus secured, the rates per shift were computed, and these rates were classified by amounts, as appears in the following tables, the first of which relates to miners.

Average earnings per day or shift and average number and per cent of miners earning each classified amount per day or shift in May, 1913.

AVERAGE NUMBER.

Mining company.	Average number of miners.	Average earnings per day or shift.	Miners earning each classified amount per day or shift.						
			Under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$3.50 and under $4.	$4 and under $4.50.	$4.50 and over.
No. 1. Calumet & Hecla	719.3	$3.54	.....	.....	46.5	384.7	193.6	72.2	22.3
No. 2. Osceola	65.9	3.45	.....	.....	4.1	46.6	5.6	3.7	5.9
No. 3. North Kearsarge	98.8	3.69	.....	.....	.....	57.0	15.2	15.3	11.2
No. 4. South Kearsarge	79.4	3.06	.....	.....	52.2	19.3	3.9	3.9	.....
No. 5. Isle Royale	197.3	3.15	0.3	0.4	86.9	89.9	9.7	8.2	2.0
No. 6. Ahmeek	139.2	3.72	.....	.....	11.6	61.1	24.2	22.3	20.0
No. 7. Tamarack	108.8	3.39	.....	.....	16.0	63.8	13.5	4.0	11.4
No. 8. Allouez	91.0	3.57	.....	.....	.4	69.3	11.6	.....	9.8
No. 9. Superior	46.6	3.68	.....	.....	.4	33.8	1.9	2.7	7.8
No. 10. Centennial	31.9	3.40	.....	.....	.....	26.4	3.2	2.2	.....
No. 11. La Salle	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 12. Laurium	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, Nos. 1 to 12	1,578.2	3.48	.3	.4	218.1	851.9	282.4	134.5	90.4
No. 13	251.2	2.74	.....	.....	220.2	29.0	2.0	.....	.....
No. 14	187.8	2.67	.....	.....	183.9	3.9	.....	.....	.....
No. 15	355.1	2.65	1.3	1.7	327.0	22.6	2.5	.....	.....
No. 16	624.6	2.78	.....	.....	580.6	40.1	3.9	.....	.....
No. 17	227.1	2.90	.....	1.0	168.7	36.1	11.5	8.9	.9
No. 18	107.1	2.75	.....	.....	99.7	5.6	1.9	.....	.....
No. 19	94.0	2.63	.....	66.5	11.6	11.9	4.0	.....	.....
No. 20	89.1	2.85	.....	.....	70.7	16.0	2.2	.1	.....
No. 21	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 22	52.3	2.45	.....	12.9	39.4	.....	.....	.....	.....
No. 23	46.3	2.61	.....	.....	46.3	.....	.....	.....	.....
No. 24	8.1	2.59	.....	.....	8.1	.....	.....	.....	.....
No. 25	40.3	2.50	.....	15.7	22.6	2.0	.....	.....	.....
Total, Nos. 13 to 25	2,083.0	2.73	1.3	97.8	1,778.2	167.2	28.0	9.0	.9
Total, all companies	3,661.2	3.06	1.6	98.2	1,996.9	1,019.1	310.4	143.5	91.3

Average earnings per day or shift and average number and per cent of miners in each classified amount per day or shift in May, 1913—Concluded.

PER CENT.

Mining company.	Average number of miners.	Average earnings per day or shift.	Miners earning each classified amount per day or shift.						
			Under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$3.50 and under $4.	$4 and under $4.50.	$4.50 and over.
No. 1. Calumet & Hecla	719.3	$3.54	.....	.....	6.5	53.5	26.9	10.0	3.1
No. 2. Osceola	65.9	3.45	.....	.....	6.2	70.7	8.5	5.6	9.0
No. 3. North Kearsarge	98.8	3.69	.....	.....	.....	57.7	15.4	15.5	11.3
No. 4. South Kearsarge	79.4	3.06	.....	.....	65.7	24.3	4.9	4.9	.....
No. 5. Isle Royale	197.3	3.15	0.2	0.2	44.0	45.6	4.9	4.2	1.0
No 6. Ahmeek	139.2	3.72	.....	.....	8.3	43.9	17.4	16.0	14.4
No. 7. Tamarack	108.8	3.39	.....	.....	14.7	58.6	12.4	3.6	10.5
No. 8. Allouez	91.0	3.57	.....	.....	.4	76.2	12.7	.....	10.8
No. 9. Superior	46.6	3.68	.....	.....	.9	72.5	4.1	5.8	16.7
No. 10. Centennial	31.9	3.40	.....	.....	.....	82.8	10.0	6.9	.....
No. 11. La Salle	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 12. Laurium	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, Nos. 1 to 12	1,578.2	3.48	(1)	(1)	13.8	54.0	17.9	8.5	5.7
No. 13	251.2	2.74	.....	.....	87.7	11.5	.8	.....	.....
No. 14	187.8	2.67	.....	.....	97.9	2.1	.....	.....	.....
No. 15	355.1	2.65	.4	.5	92.1	6.4	.7	.....	.....
No. 16	624.6	2.78	.....	.....	93.0	6.4	.6	.....	.....
No. 17	227.1	2.70	.....	.4	74.3	15.9	5.1	3.9	.4
No. 18	107.1	2.75	.....	.....	93.1	5.2	1.8	.....	.....
No. 19	94.0	2.63	.....	70.7	12.3	12.7	4.3	.....	.....
No. 20	89.1	2.85	.....	.....	79.3	18.0	2.5	.1	.....
No. 21	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 22	52.3	2.45	.....	24.7	75.3	.....	.....	.....	.....
No. 23	46.3	2.61	.....	.....	100.0	.....	.....	.....	.....
No. 24	8.1	2.59	.....	.....	100.0	.....	.....	.....	.....
No. 25	40.3	2.50	.....	39.0	56.1	5.0	.....	.....	.....
Total, Nos. 13 to 25	2,083.0	2.73	.1	4.7	85.4	8.0	1.3	.4	(1)
Total, all companies	3,661.2	3.06	(1)	2.7	54.5	27.8	8.5	3.9	2.5

[1] Less than one-tenth of 1 per cent

As appears by the second part of the table, 54 per cent of the miners in the mines of the Calumet & Hecla and subsidiary companies earned from $3 to $3.50 per shift, and 85.4 per cent of the miners in the mines of the other companies earned from $2.50 to $3 per shift. The average rate per shift for miners was $3.48 in the mines of the Calumet & Hecla and subsidiary companies and $2.73 in the mines of the other companies. It should be understood, however, that the rate per shift was found by dividing the monthly rates or earnings by 25 in the case of the Calumet & Hecla and subsidiary companies and by 27 in the case of the other companies. As previously explained, the division is made by 25 for the former companies and by 27 for the latter companies because May was a month of 31 days. In a month of 30 days the division is made by 24 and 26, respectively.

To reduce the average shift rate of miners for the Calumet & Hecla and subsidiary companies to the same basis as the average rate for the other companies, the average rate of the former, $3.48, must be multiplied by 25 and divided by 27. This results in $3.22 as compared with the average shift rate of the other companies than the Calumet & Hecla and subsidiary companies, which is $2.73, figured on the 27 shift a month basis.

of contract for ...rammers, similar in form to that
that the ...

...d average number and per cent of trammers earning ...mount per day or shift in May, 1913.

AVERAGE NUMBER.

Company.	Average number of trammers.	Average earnings per day or shift.	Trammers earning each classified amount per day or shift.						
			Under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$3.50 and under $4.	$4 and under $4.50.	$4.50 and over.
No. 1. Calumet & Hecla	502.8	$3.08	0.2	31.5	240.3	115.7	100.8	14.1	0.1
No. 2. Osceola	64.6	2.54	.....	.....	64.6	.....	.....	.....	.....
No. 3. North Kearsarge	150.6	2.54	.....	.....	150.6	.....	.....	.....	.....
No. 4. South Kearsarge	99.9	2.54	.....	.....	99.9	.....	.....	.....	.....
No. 5. Isle Royale	127.8	2.55	.....	.....	127.8	.....	.....	.....	.....
No. 6. Ahmeek	120.1	2.93	.....	.3	75.1	24.7	15.4	1.1	3.6
No. 7. Tamarack	75.7	2.81	.....	.....	75.7	.....	.....	.....	.....
No. 8. Allouez	104.7	2.68	.....	.....	89.7	15.0	.....	.....	.....
No. 9. Superior	29.6	3.17	.....	.2	8.3	17.5	3.6	.....	.....
No. 10. Centennial	23.9	2.76	.....	.....	17.2	6.1	.6	.....	.....
No. 11. La Salle	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 12. Laurium	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, Nos. 1 to 12	1,299.7	2.83	.2	32.0	949.2	179.0	120.4	15.2	3.7
No. 13	134.0	2.31	.....	134.0	.....	.....	.....	.....	.....
No. 14	68.6	2.33	.....	68.6	.....	.....	.....	.....	.....
No. 15	140.0	2.31	.....	140.0	.....	.....	.....	.....	.....
No. 16	174.0	2.53	.....	5.2	168.8	.....	.....	.....	.....
No. 17	133.9	2.53	.....	2.7	131.2	.....	.....	.....	.....
No. 18	80.3	2.48	.....	5.0	75.3	.....	.....	.....	.....
No. 19	59.0	2.38	.....	55.7	3.3	.....	.....	.....	.....
No. 20	72.7	2.38	.....	72.7	.....	.....	.....	.....	.....
No. 21	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 22	51.9	2.30	.....	51.9	.....	.....	.....	.....	.....
No. 23	23.6	2.23	.....	23.6	.....	.....	.....	.....	.....
No. 24	2.2	2.62	.....	.....	2.2	.....	.....	.....	.....
No. 25	72.7	2.29	.....	72.4	.3	.....	.....	.....	.....
Total, Nos. 13 to 25	1,012.9	2.40	.....	631.8	381.1	.....	.....	.....	.....
Total, all companies	2,312.6	2.64	.2	663.8	1,330.3	179.0	120.4	15.2	3.7

PER CENT.

Company.	Average number of trammers.	Average earnings per day or shift.	Trammers earning each classified amount per day or shift.						
			Under $2.	$2 and under $2.50.	$2.50 and under $3.	$3 and under $3.50.	$3.50 and under $4.	$4 and under $4.50.	$4.50 and over.
No. 1. Calumet & Hecla	502.8	$3.08	(1)	6.3	47.8	23.0	20.0	2.8	(1)
No. 2. Osceola	64.6	2.54	.....	.....	100.0	.....	.....	.....	.....
No. 3. North Kearsarge	150.6	2.54	.....	.....	100.0	.....	.....	.....	.....
No. 4. South Kearsarge	99.9	2.54	.....	.....	100.0	.....	.....	.....	.....
No. 5. Isle Royale	127.8	2.55	.....	.....	100.0	.....	.....	.....	.....
No. 6. Ahmeek	120.1	2.93	.....	.2	62.5	20.6	12.8	.9	3.0
No. 7. Tamarack	75.7	2.81	.....	.....	100.0	.....	.....	.....	.....
No. 8. Allouez	104.7	2.68	.....	.....	85.7	14.3	.....	.....	.....
No. 9. Superior	29.6	3.17	.....	.7	28.0	59.1	12.2	.....	.....
No. 10. Centennial	23.9	2.76	.....	.....	72.0	25.5	2.5	.....	.....
No. 11. La Salle	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 12. Laurium	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, Nos. 1 to 12	1,299.7	2.83	(1)	2.3	73.0	13.8	9.3	1.2	.3
No. 13	134.0	2.31	.....	100.0	.....	.....	.....	.....	.....
No. 14	68.6	2.33	.....	100.0	.....	.....	.....	.....	.....
No. 15	140.0	2.31	.....	100.0	.....	.....	.....	.....	.....
No. 16	174.0	2.53	.....	3.0	97.0	.....	.....	.....	.....
No. 17	133.9	2.53	.....	2.0	98.0	.....	.....	.....	.....
No. 18	80.3	2.48	.....	6.2	93.8	.....	.....	.....	.....
No. 19	59.0	2.38	.....	94.4	5.6	.....	.....	.....	.....
No. 20	72.7	2.38	.....	100.0	.....	.....	.....	.....	.....
No. 21	.....	.....	.....	.....	.....	.....	.....	.....	.....
No. 22	51.9	2.30	.....	100.0	.....	.....	.....	.....	.....
No. 23	23.6	2.23	.....	100.0	.....	.....	.....	.....	.....
No. 24	2.2	2.62	.....	.....	100.0	.....	.....	.....	.....
No. 25	72.7	2.29	.....	99.6	.4	.....	.....	.....	.....
Total, Nos. 13 to 25	1,012.9	2.40	.....	62.4	37.6	.....	.....	.....	.....
Total, all companies	2,312.6	2.64	(1)	28.7	57.5	7.7	5.2	.7	.2

[1] Less than one-tenth of 1 per cent.

As appears by the second part of this table, 73 per cent of the trammers in the mines of the Calumet & Hecla and subsidiary companies earned from $2.50 to $3 per shift and 62.4 per cent of the trammers in the mines of the other companies earned from $2 to $2.50 per shift.

The average rate per shift of the trammers employed by the Calumet & Hecla and subsidiary companies appears as $2.83, and the average of trammers employed by other companies appears as $2.40, and both averages are figured on the same basis, that is, by dividing the monthly wages of "company account" trammers by 27 and dividing the earnings of contract trammers for the month by the number of shifts that they actually worked.

During the strike many mine workers brought to the headquarters of the Western Federation of Labor their "dockets" or pay tickets, which showed how much they had earned during certain months, how much were the deductions, and how much was the net pay they received. These tickets were exhibited to prove that the earnings of mine workers were very low, and many of them were published in the Miners' Bulletin, a triweekly paper issued by the federation. Each docket showed the name of the employee to whom it belonged, the company for which he worked, and the number of shifts for which he was paid, but did not show his occupation, and in some cases did not give details about the deductions. An agent of the Bureau of Labor Statistics requested Guy E. Miller, editor of the Miners' Bulletin, to lend him some of the tickets in order that he might compare them with the pay rolls. He requested Mr. Miller to pick out some of the lowest of the tickets, and those that the latter selected were compared with the pay rolls at the various mine offices. The facts shown by the tickets supplemented by the facts shown by the pay rolls are presented in the following table and explanatory footnotes:

Name.	Occupation.	Month.	Shifts worked.	Earnings.	Deductions.	Net amount received.
Calumet & Hecla mine:						
Paul Blomster	Section laborer, surface.	July, 1913	16	$32.00	[1] $4.00	$28.00
Osceola mine:						
John James	Loose inspector	June, 1913	24	63.69	[2] .50	63.19
Matt Crovatich	Dryman [3]	Jan., 1913	27	50.88	[4] 5.50	45.38
Dominic Bruno	Trammer	July, 1913	5	14.42	[5] 5.00	[6] 9.42
North Kearsarge mine:						
Frank Isaacson	Rollerman	Mar., 1913	23	56.62	[7] 1.10	55.52
John James	Timberman	July, 1912	14½	32.35	[8] 1.00	69.35
Do	Tracklayer	...do...	16¾	38.00		
Michael Somers	Contract miner	Jan., 1912	21	35.64	[9] 6.50	[10] 29.14
Louis Yuhias	Trammer	July, 1913	18	46.80	[11] 6.00	40.80
John Rigo	Laborer, surface	June, 1913	24	45.69	[2] .50	45.19

[1] Physician and aid fund, $1; pasture for 3 cows, $3; one free, others $1.50 per month.
[2] Physician and aid fund, $0.50.
[3] A cripple and practically a pensioner.
[4] Physician and aid fund, $1; rent, $4; water, $0.50.
[5] Physician and aid fund, $1; rent and water, $4.
[6] Also drew $14 from aid fund during month on account of sickness.
[7] Physician and aid fund, $1; supplies, $0.10.
[8] Physician and aid fund, $1.
[9] Physician and aid fund, $1.50; land lease for one year, $5.
[10] On referring to pay roll it was found that these earnings were much smaller than during other months in 1912. During the whole year Somers worked 301 shifts and earned $1,061.92, an average of $3.53 per shift. The deductions that were made from his earnings during the year were: $16 for physician and aid fund; $26 for wife in hospital; $0.80 for supplies; $33.65 for coal; total $54.45. Fractured leg in January, 1913, and drew maximum amount provided by the State compensation law.
[11] Physician and aid fund, $1; coal, $5.

Name.	Occupation.	Month.	Shifts worked.	Earnings.	Deductions.	Net amount received.
South Kearsarge mine:						
Gus Warmanen	Janitor[1]	June, 1913	24½	$45.13	[2] $0.50	$44.63
Iuri Kulik	Trammer	Feb., 1913	19¾	50.07	[3] 9.00	41.07
Do	do	Mar., 1913	24	60.71	[3] 9.00	51.71
Proska Sefersen	do	Aug. 1912	20	50.35	[4] 1.50	48 85
Do	do	Sept., 1912	25	63.45	[5] .65	62.80
Do	do	Oct., 1912	16	40.60	[5] .65	50.50
Do	Laborer	do	5	10.55		
Do	do	Nov., 1912	20	42.30	[2] .50	41.80
Do	do	Dec., 1912	11	23.70	[2] .50	23.20
Do	do	Jan., 1913	25	52.88	[2] .50	52.38
Do	do	Feb., 1913	9	19.05	[2] .50	18.55
Do	do	Apr., 1913	20	42.31	[2] .50	41.81
Dominic Bruno	Skip tender	Nov., 1912	26	59.00	[6] 1.00	63.70
	Timberman	do	2½	5.70		
Anton Krulitz	Trammer	Feb., 1913	17	43.15	[2] .50	47.94
	Laborer	do	2½	5.29		
Ahmeek mine:						
John Gregorich	Trammer	May, 1913	25	63.45	.50	62.95
Mike Miter	do	Nov., 1910	21	48.45	[7] 6.50	[8] 41.95
Allouez mine:						
Bozo Kasanovich	Trammer, contract	Nov. 1912	23	58.49	[6] 1.00	57.49
Do	do	Feb., 1912	17	39.25	[6] 1.00	[9] 38.25
Herman Lukkonen	Miners' helper, contract.[10]	Apr., 1912	25	47.87	[6] 1.00	46.87
Do	do	June, 1912	25	43.25	[6] 1.00	[11] 42.25
Do	do	July, 1912	25	[12] 43.25	[6] 1.00	[13] 44.65
	Timberman	do	1	2.40		
Mathew Aho	Miners' helper, contract.	Nov., 1912	25⅛	46.55	[14] 3.65	42.90
Do	do	Feb., 1913	16	34.33	[15] 15.11	19.22
Do	Miners' helper, company account.	Mar., 1913	20½	46.95	[6] 1.00	45.95
Superior mine:						
Joseph Allen	Lander, Rockhouse	May, 1913	26	53.00	[2] .50	52.50
La Salle mine:						
Geo. Brozovich	Laborer, surface	July, 1913	22	44.00	[16] 1.50	42.50
Wolverine mine:						
Anselm Dimonen	Drill boy[10]	Mar., 1913	13	17.50	[2] .50	17.00
Uno Lehto	Mucker, underground.	May, 1913	14	26.90	[2] .50	26.40
Waino Lehto	Laborer, underground.	June, 1913	8	17.55	[6] 1.00	[17] 16.55
John Lukajawie	Miners' helper[10]	May, 1913	27	41.55	[2] .50	41.05
Henry Lukajawie	Mucker	do	25	54.80	[6] 1.00	53.80
Dependent Mossa	Laborer, underground.	July, 1913	9	19.75	[2] .50	[18] 21.95
	Stemmer	do	1	2.70		
Paul Musso	Laborer, Rockhouse.	do	17	38.60	[19] 15.15	23.45
Israel Harris	Laborer, underground.	Mar., 1913	18	39.45	[20] 55.60	
Do	Stemmer	do	6	16.15		

[1] A cripple and practically a pensioner.
[2] Physician and aid fund $0.50.
[3] Physician and aid fund, $1; rent for boarding house, $8.
[4] Physician and aid fund, $1; supplies, $0.50.
[5] Physician and aid fund, $0.50; supplies, $0.15.
[6] Physician and aid fund $1.
[7] Physician and aid fund, $1.50; coal, $5.
[8] The pay roll shows that this man worked 150 shifts as a contract miner from January to July, inclusive, 1913; earnings, $188.50; average per shift, $3.26; deductions, physician and aid fund, $7; 3 tons of coal, $15; lamp, $0.50; total deductions, $22.50.
[9] During the months of March, April, May, and June, 1913, this man worked 72½ shifts as a contract trammer and earned $150.24. As his earnings each month were less than those paid trammers on company account, he was paid at company account rate, a total of $184.05, instead of his actual earnings.
[10] Boy.
[11] Paid company account rate; contract not finished.
[12] Paid company account rate; actually earned $28.75 on contract.
[13] During the last 5 months of 1912 this employee worked 122⅛ shifts as a miner's helper and earned $290.43.
[14] Physician and aid fund, $1; overpaid in October, $2.65.
[15] Physician and aid fund, $1; overpaid in January, $14.11.
[16] Physician and aid fund, $1.50.
[17] Also received $17 sick benefits from aid fund during month.
[18] Also received $7 sick benefits from aid fund during month.
[19] Physician and aid fund, $1; supplies: Building material for home owned by employee, $14.15.
[20] Physician and aid fund, $1; ground rent for year, $5; assigned to grocery store, $49.60.

In each case the table shows the occupation of the employee, and the footnotes explain the deductions.

As there has been a shortage of labor in the Michigan copper district for several years, the mine workers have steady work the year round. In copper mining there is no season of shortened production, as during some months in coal mining. The only general holidays in the Michigan district are New Year, July 4, election day, and Christmas. Miners work only half a day on Saturday, but other mine workers work Saturday or Saturday nights, but two hours less than on other days. Counting Saturdays as workdays, the number of days the various mines were operated in 1912 was as follows: Tamarack, 311; Lake and Houghton, 310; Calumet & Hecla, Ahmeek, Allouez, Centennial, Superior, Osceola, North Kearsarge, South Kearsarge, Laurium, Oneco, Quincy, Hancock, and Winona, 309; Isle Royale, 308½; Copper Range, 308; Mohawk and Wolverine, 307; Mass, 306; Franklin, 256 (idle in January and July).

The average number of days that copper mines in the United States were operated during 1911 was 308;[1] the average number of days that coal mines in the United States were operated during the same year was 220.[2]

HOURS OF LABOR.

In the Michigan copper range the nominal hours of labor for underground workers are 10, or from 7 o'clock in the morning until 5 o'clock in the afternoon, and for the night shift from 7 p. m. to 5 a. m., not including 1 hour allowed for luncheon. According to this nominal schedule, an underground man leaves the surface at 7 o'clock and returns to the surface at 5 o'clock; that is, he is underground 10 hours, including the luncheon hour and the time required to descend into the shaft and to ascend to the top. But the man cages in which men are conveyed have a very limited capacity. Only one man cage in the district has a capacity for 40 men, and the others have a capacity for only 30 or less. Hence, there is much delay in carrying men down and in bringing them up, and in most mines the men are usually underground 10 hours and 30 minutes, and the mine workers claim not infrequently 11 hours. According to a statement of the Calumet & Hecla Mining Co., its underground men are underground 10 hours and 30 minutes, and some other companies report 10 hours and 20 minutes. Each of the companies was requested to answer the following inquiries:

Number of hours in each shift?
Does this time include the time allowed for going from the surface to the working place and returning? How much time is required each way?
Does this include time allowed for eating luncheon? If so, how much time?

The replies of the companies follow:

CALUMET & HECLA MINING CO.

The hours per shift are 10 hours and 30 minutes, including one hour for luncheon, except Saturday, when the number of hours for miners is 5 hours and 45 minutes, and for trammers and tim-

[1] Metal-Mine Accidents in the United States during the Calendar Year 1911, by Albert H. Fay. Technical Paper 40, Department of the Interior, Bureau of Mines, p. 21.
[2] The Production of Coal in 1912, by Edward W. Parker. Bulletin, U. S. Geological Survey p. 37.

bermen 8 hours and 15 minutes. This includes the time allowed for going from the surface to the working place and returning. In the case of the Conglomerate mine, where all of the blasting is of necessity done at one time, viz, at the end of the shift, and where the depths are so great that it takes considerable time to hoist a cage load of 30 men, the time required in going down to work, waiting for the cage, and returning to the surface is approximately 1 hour and 45 minutes.

OSCEOLA CONSOLIDATED MINING CO.

The hours per shift are not over 10 hours and 30 minutes—generally 15 or 20 minutes less. This includes ordinarily one hour for luncheon. On Saturday the day-shift miners are in the mine until noon—just five hours; the night-shift miners do not work at all; trammers, timbermen, etc., are in the mine eight or eight and one-half hours on Saturday. This includes the time allowed for going from the surface to the working place and returning. From the surface to the working place consumes 15 to 30 minutes, depending on the depth of the shaft and the distance from the shaft to the working place. From the time the men quit working to the time they reach the surface at the end of the shift consumes from 25 to 60 minutes.

ISLE ROYALE COPPER CO.

Miners average 9 hours and 48 minutes per shift; trammers, timbermen, and other underground labor, 9 hours and 55 minutes per shift. This includes 1 hour for luncheon and the time allowed for going from the surface to the working place and returning, which averages from 5 to 15 minutes, depending on the distance. Surface time averages 9 hours and 40 minutes per shift, not including 1 hour for luncheon, except on Saturday, when the working time is 8 hours.

AHMEEK MINING CO.

All underground employees' weekday shifts, except on Saturday, are 10 hours and 15 minutes, including 1 hour for luncheon, and including the time required for going and returning from the place of work to the surface, about 8 minutes each way. The Saturday shift for miners is 5 hours; for trammers, 8 hours and 15 minutes.

TAMARACK MINING CO.

The hours per shift are 10 hours and 15 minutes, out of which 1 hour is allowed for dinner. This covers the time from leaving the collar of the shaft to go down into the mine until the return to the collar at the end of the shift. About one-half hour is consumed in going from the collar of the shaft to the working place and the same in returning from work.

ALLOUEZ MINING CO.

The hours per shift are 10 hours and 20 minutes, except on Saturday. This includes 1 hour allowed for dinner and the time allowed for going from the surface to the working place and returning, which varies considerably, depending upon the distance of the working place from the shaft, from 10 to 20 minutes each way. Men on first trip down take the first car up. On Saturday the first trip of the day shift goes down at 6.45 a. m., and the miners are up at 12.10 p. m., and the trammers, timbermen, etc., at 3.30 p. m. On Saturday night shift no miners work; trammers go down at 3.35 p. m. and are up at 11.15 p.m.

SUPERIOR COPPER CO.

Men are underground about 10 hours and 20 minutes, 1 hour being allowed for dinner. This includes the time allowed for going from the surface to the working place and returning, about 10 minutes each way.

CENTENNIAL COPPER MINING CO.

The hours per shift are 10 hours and 20 minutes, except on Saturday. This includes 1 hour allowed for dinner, and the time allowed for going from the surface to the working place and returning, which varies considerably, depending upon the distance of the working place from the shaft, from 10 to 20 minutes each way. Men on first trip down take the first car up. On Saturday the first trip of the day shift goes down at 6.30 to 6.45 a. m., and the miners are up at 12.10 p. m. and the trammers, timbermen, etc., at 3.30 p. m. On Saturday night shift no miners work; trammers go down at 3.35 p. m. and are up at 11.30 p. m.

LA SALLE COPPER CO.

The hours per shift are 10, except on Saturday. This includes the time allowed for going from the surface to the working place and returning, about 10 minutes each way. This also includes one hour for luncheon. Men are brought to the surface for luncheon.

LAURIUM MINING CO.

The hours per shift are 10, except on Saturday. This includes the time allowed for going from the surface to the working place and returning, about 10 minutes each way. This also includes one hour for luncheon. Men are brought to the surface for luncheon.

WINONA COPPER CO.

The nominal underground shift is nine hours, not including one hour allowed for luncheon, but including most of the time required for going from the surface to the working place and returning. Only about 15 minutes is required to hoist and lower all employees each way.

HOUGHTON COPPER CO.

The nominal underground shift is nine hours, not including one hour allowed for luncheon, but including most of the time required for going from the surface to the working place and returning. Only about 15 minutes is required to hoist and lower all employees each way.

MASS CONSOLIDATED MINING CO.

The shifts are nine hours, excluding one hour for luncheon, but including time for going from the surface to the working place and returning, about 15 minutes each way.

COPPER RANGE CONSOLIDATED CO.

For the first five days of the week all men start underground at 7 a. m. and start up at 4.45 p. m., having one hour at noon for luncheon. From 15 to 20 minutes are required to descend and ascend. Men sent down first are taken up first. On Saturdays miners start down at 7 a. m. and start up at 11.45 a. m. Other underground men start down at 7 a. m. and up at 3 p. m., at which time the night shift trammers and laborers start down, and they begin coming up at 10.45 p. m.

QUINCY MINING CO.

Men are underground about nine hours. This includes one hour allowed for luncheon, and includes the time required for going from the surface to the working place and returning, about one-half hour each way.

HANCOCK CONSOLIDATED MINING CO.

The shifts are nine hours. This includes one hour for luncheon and includes the time required for going from the surface to the working place and returning, about 10 minutes each way.

ONECO COPPER MINING CO.

The shifts are nine hours. This includes one hour for luncheon and includes the time required for going from the surface to the working place and returning, about five minutes each way.

LAKE COPPER CO.

Shifts are called 10 hours. This includes time allowed for luncheon, one hour for miners and half an hour for trammers, and includes the time required for going from the surface to the working place and returning. Any working place in the mine can be reached in 15 minutes from the time a man leaves the surface.

MOHAWK MINING CO.

The hours per shift are 10, including one hour for luncheon and the time required for going from the surface to the working place and returning, from 15 to 30 minutes.

WOLVERINE COPPER MINING CO.

The hours per shift are 10 hours and 30 minutes, including one hour for luncheon and the time required for going from the surface to the working place and returning, from 15 to 30 minutes.

FRANKLIN MINING CO.

The hours per shift are nine for underground work. This is exclusive of time allowed for luncheon, but includes the time required for going from the surface to the working place and returning, from 15 to 30 minutes each way.

The contracts of the Western Federation of Miners with the mining companies in Montana prescribe that the working time shall be eight and one-half hours per shift, including the time necessary to go down into the shaft and half an hour for luncheon, but the men return to the surface on their own time. As the mines in Montana are not nearly so deep as the older mines in Michigan, less time is required for going down or coming up in the former than in the latter.

In a number of States there are laws which provide that the hours of labor of men working underground shall not exceed eight per day. The States that have enacted such laws, the years of enactment, and the general provisions of the statutes now in force are as follows: In Wyoming, 1890–91, 1909; Colorado, 1905, 1911; Utah, 1896; Montana, 1905, 1907, 1911; Nevada, 1903; Idaho, 1907, the period of employment in underground work shall not exceed eight hours.

California, 1909.—The period of employment in underground work shall not exceed eight hours exclusive of meal time.

Washington, 1909.—It is unlawful to cause any underground employee to remain at his place for more than 8 hours out of any 24, exclusive of half an hour for luncheon.

Missouri, 1901.—It is unlawful to work underground laborers more than 8 hours in 24.

Oregon, 1907.—No person shall permit or require any person to work in any underground metal mines more than 8 out of 24 hours.

Arizona, 1903, 1912.—The hours of labor of men employed in underground mines, workings, pit workings, and tunneling shall not exceed eight, including the time going to and returning from the place of work; that is, the time between leaving the surface and returning thereto shall not exceed 8 hours in any 24.

Alaska, 1913.—The hours of labor of men working underground in mines shall not exceed eight, exclusive of descending or ascending time, or other time going to or returning from work.

Pennsylvania, 1911.—No hoisting engineer in any anthracite mine shall be engaged longer than 8 out of 24 hours.

Oklahoma, 1908.—Eight hours shall constitute a day's labor in underground workings. The United States Supreme Court has decided that a Federal statute similar in language to the Oklahoma law did not prevent the making of agreements for working longer than eight hours.

THE TRAMMING TROUBLE.

For two years or more before the strike of 1913 there was a serious shortage of labor in the Michigan copper district. During this time the number of additional men that were needed was estimated at from 1,500 to 2,000. There was a greater shortage of trammers than of any other class of mine workers, and this shortage of trammers is a chronic condition. Usually about 29 per cent of the mine workers are miners, 21 per cent trammers, 28 per cent other underground workers, and 22 per cent surface workers.

The unskilled work of trammers is much harder labor than the work of miners, and their pay is considerably lower, as will be seen by referring to the section of this report which relates to wages. In addition, trammers work longer hours per week than miners. For five days a week, Monday to Friday, on either day or night shift, the hours that miners and trammers are underground are nominally 10, including an hour allowed for luncheon, but this time is often stretched into 10½ or 11 hours. This lengthening of the time that men are underground is caused by inefficient means for lowering men into the mine and bringing them up. The man cages are too small. There is in all the mines only one cage that carries 40 men, and the others carry only 30 or less, usually less.

The longer hours that trammers work are on Saturday, when the miners do not work a night shift and the day shift is only from 5 to 5½ hours, but the trammers have both day and night shifts, each from 7 to 7½ hours.

Before the strike began there was more dissatisfaction among the trammers than among any other class of mine workers. It is generally admitted, even by the mine managers, that the trammers have much the hardest work to do that is done in the mines. Two trammers have to load and push cars which weigh 1,200 to 3,000 pounds and which are loaded with from one and a half to two and a half tons of rock. Two men, or for the heavier loads three, push this weight of from 4,800 to 8,000 pounds over rough tracks hundreds of feet, often from 1,000 to 1,500 feet and sometimes farther, and do this many times a day. This is exhausting, muscle-straining, back-breaking work, really work for beasts of burden or for mechanical motors. It is said that trammers break down physically in a few years, and there are no old men on this kind of work. Only the young and strong can stand it.

Tramming is done mostly by the Finns, Croatians, Hungarians, Italians, and Poles. The work is so hard that Cornish men and other old miners will not touch it. Trammers, dissatisfied with their long hours, hard work, and low pay, hold on to their jobs hoping to be given jobs as miners, but the supply of miners is greater than that of trammers, and many trammers, after waiting in vain to be put to work on drilling machines, get disgusted and leave the mines.

When work was resumed in some of the mines the chief difficulty was not in getting miners but in getting enough trammers, and in many cases miners that were loyal to the companies were required to do tramming in order that the mines could be operated at all.

In very few of the mines in the Michigan copper district is any tramming done except by hand. In a few mines mechanical motors are used on some levels and in only one are mules used, and even in most of these mines there is much hand tramming. Some of the Michigan mine managers who have used mechanical motors admit that thereby the costs of tramming have been greatly reduced. Why all of them do not introduce mechanical motors in all mines is hard to understand, especially as there has been a constant cry about the scarcity of trammers in the copper district, and this scarcity has been greater during the two years preceding the strike than ever before. The only explanation that has been given is that it is impracticable to use motors where mining is done at so many places in the same mine. But it seems practicable to concentrate the mining on a few levels at a time, instead of working on many levels simultaneously, as is done in many of the Michigan mines. In mines in this district, as well as mines in other parts of the world, mining is concentrated on a few levels until they are worked out, and motors are used to great advantage.

The following table, based on reports from the companies, shows in which mines motors are used, the number of trammers, the weight of the cars, and the weight of the load:

Mine.	Motors used.	Trammers.		Weight of tramcars empty.	Tonnage capacity of tramcars.	
		Number that load and push cars.	Number that load cars only.		Level full.	Heaped, if required.
Ahmeek:				*Pounds.*	*Tons.*	*Tons.*
Tram		112		1,575	1.75	2.3
Mule	(1)		8	2,027	2.5	3
Allouez	No.	105		[2] 1,575	2.25	
Baltic	(3)	(3)	(3)	2,600	2.7	3
Calumet & Hecla	Yes.	268	235	1,900	2.3	
Centennial	No.	24		1,575	2.1	2.25
Champion	(3)	(3)	(3)	2,600	2.7	3
Franklin	No.	32		2,000	2	
Hancock:						
Hand tramming	No.	17		1,890	1.5	2
Electric	Yes.		7	3,000	2.5	3
Houghton	No.	6		2,500	2.25	3
Isle Royale	No.	128		1,360	[4] 2	
Lake	No.	35		2,500–3,000		2.5
La Salle	No.			1,700	2.25	2.5
Laurium	No.	2		1,700	2.25	2.5
Mass	No.	57		2,094	2	2.5
Mohawk	No.	184		1,317	1.75	
North Kearsarge	No.	151		1,840	2.15	2.7
Oneco	No.	2		1,890	1.5	2
Osceola	No.	65		1,840	2.15	2.7
Quincy	( )	(3)	( )	2,000–3,100	2.5	
South Kearsarge	No.	100		1,840	2.15	2.7
Superior	No.	30		1,900	2.25	
Tamarack	Yes.	35	41	2,200	2.5	2.65
Trimountain	( )	(3)	(3)	2,600	2.7	3
Winona	No.	76		2,500	2.25	3
Wolverine	No.	99		1,185	1.8	

[1] Mules used instead of motors.
[2] When fitted with door car weighs 1,665 pounds.
[3] Not reported, but motors are known to be used to some extent in some of these mines.
[4] Average, 1.9 to 2.2.

Most of the tramcars used in Michigan copper mines are thoroughly antiquated. Most of them are old loose-wheel cars, the axles of which can not properly be kept supplied with grease. These cars also have their forward wheels but little in front of the middle of the cars. This arrangement facilitates dumping, but throws the load unevenly on the four wheels. The two forward wheels carry the greater part of the weight, and this makes these wheels bind on the tracks, especially in going around sharp curves. The tracks in many Michigan mines, following the lode, have many sharp curves and should be straightened, even though no copper-bearing rock was dug in making the drifts straighter.

Cars in a few of the mines have tight wheels; that is, the wheels are fixed on the axles, and the ends of the axles turn in brass boxes in which waste can be packed and the oil retained longer. These wheels and axles are like those on the truck of a railroad car, and are a great improvement on the old type of loose-wheel car.

In one or two mines still better tramcar trucks are used. The axles of these cars are provided with roller bearings, which greatly diminish the labor of pushing them. The expense of equipping all mines with this type of car would not be great, as these trucks cost only $24 each. Both types of improved cars last described have their loads evenly distributed on the four wheels, as each pair of wheels is the same distance from the end of the car. Both of these types of cars are dumped by mechanical tipplers.

THE ONE-MAN DRILL.

One of the grievances of the miners was in regard to the introduction of the one-man drill. This machine, invented by a man named Leyner, and called the water Leyner drill, was introduced in the various mines during 1907 and succeeding years, mostly in 1911 and 1912. Before this machine was used, two men worked on each drill. Both men set up or took down the machine, one operated it, and the other, using a can, poured water in the hole as it was drilled. They alternated daily in this work, and their earnings were the same, either on a shift or on a contract basis. Compressed air piped from the surface furnished power for the machine.

The water Leyner is mechanically an improvement on the old machine, because a man is not required to pour water in the hole that is drilled. Water is piped from the surface or from tanks in the mine, and under pressure is forced through a hole lengthwise in the drill to the cutting bit. Compressed air piped from the surface furnishes the power. After the machine is set up one man can easily operate it.

Many of the miners object to the one-man drill because they consider the work of setting it up or taking it down too heavy for one man. The two-man drill weighs from 275 to 300 pounds and the one-man drill weighs from 135 to 150 pounds. The machines are supported by tubular iron posts which are 3½, 4, or 4½ inches in diameter, 4 to 10 feet long, and weigh from 12 to 20 pounds per foot. At the bottom of the post is a jackscrew which weighs from 75 to 100 pounds, but which is usually detached when the position of the post is changed. The post and attachments for the one-man machine weigh practically the same as those for the two-man machine.

The drill is set up after every blast and taken down before every blast, which means that it is usually set up and taken down every day. The mining companies admit that setting up or taking down a one-man drill is heavy work for one man, but they insist that two men each working on one-man machines near each other can assist each other in this work. In many cases, however, men have not worked close enough together to assist each other.

One objection raised against the one-man drill is that where a man works by himself he may be injured by a falling rock or other accident, and perhaps rendered unconscious, so that he can not call for assistance, even if some other miner were near enough to hear his call. The mining companies claim that under the provisions of a new law men will hereafter work close enough together to render assistance to anyone that may be injured. This law, enacted by the Legislature of Michigan, and approved May 7, 1913, provides that no employee in the copper or iron mines in the State "shall be permitted or required to operate any power or machine drill at a distance of more than 150 feet in the same drift, stope, opening, or working from where another person or persons are regularly and continuously employed." Some of the miners, however, insist that there is danger of a man being so injured that he could not help himself and could not inform anyone of his injury, even one no farther than 150 feet away.

While many miners object to the change from the two-man drill to the one-man drill, others who have become accustomed to the one-man drill prefer it for the reason that at most mines they earn more with the latter. All of the mining companies insist that the one-man drill is an economic necessity. By using the one-man drill the output per miner is largely increased and the mining companies give the miner the benefit of a part of the saving. A table prepared by the Calumet & Hecla Mining Co. shows the number of tons of rock mined by miners employed by the company and its subsidiary companies using the one-man drill and the number of tons mined by such miners using the two-man drill during the calendar year 1912. According to this statement, the efficiency of miners was increased 33.90 per cent in stoping, 90.60 per cent in drift stoping, and 91.08 per cent in drifting; and the earnings of miners were increased 7.47 per cent in stoping, 21.31 per cent in drift stoping, and 19.93 per cent in drifting.[1]

[1] These terms are explained under a section of the report headed "Underground conditions," page 103.

The following table shows the average number of miners in May, 1913, that used each kind of drill, the monthly rates of miners "on company account" that used each kind of drill, and whether miners have the option of using either kind, the data in this table having been furnished by the companies:

Mine.	Year 1-man drills were introduced.	Number of miners using—		Monthly rate of miners—		Have miners option of using either 1-man or 2-man drill?
		1-man drill.	2-man drill.	On 1-man drill.	On 2-man drill.	
Ahmeek	1912	157	.....	$78.00	$69.00	No.[1]
Allouez	1912	95	.....	78.00	71.50	No.[1]
Baltic	1909, 1911	104	139	71.00–74.00	68.00	No.
Calumet & Hecla:						
Osceola lode	1908	[2] 125	[2] 694	78.00	69.00	No.
Conglomerate lode	.....	.....	.....	96.00	84.00	No.
Centennial	1912	40	.....	78.00	71.50	No.[1]
Champion	1909, 1911	108	382	71.00–74.00	68.00	No.
Franklin	1910	118	26	[3]	65.00	Yes.
Hancock	1913	14	43	68.00	68.00	Yes.
Houghton	1912	[4]	.....	78.00	.....	No.[1]
Isle Royale	1911	132	85	78.50	69.00	No.
Lake	1911	31	17	65.00	60.00	No.
La Salle	1913	[4]	.....	78.00	[4]	No.[1]
Laurium	1912	[4]	.....	78.00	[4]	No.[1]
Mass	1911	75	26	65.00	61.00	No.
Mohawk	1912	[5] 49	198	70.00	70.00	[4]
North Kearsarge	1912	84	22	78.00	69.00	No.
Oneco	[6]	.....	13	.....	68.00	
Osceola	1912	69	.....	78.00	69.00	No.
Quincy	1907	278	417	85.80	79.30	Yes
South Kearsarge	1912	32	54	78.00	69.00	Yes.
Superior	1910, 1911	63	.....	78.50	[4]	No.[1]
Tamarack	1913	39	125	78.00	73.00	Yes.
Trimountain	1909, 1911	98	116	71.00–74.00	68.00	No.
Winona	1912	37	124	[3]	67.50	Yes.
Wolverine	1913	7	112	78.00	70.00	[4]
		1,755	2,623	.....	.....	

[1] 1-man drills used exclusively.
[2] In 1 mine; 2 mines are equipped exclusively with 1-man drills.
[3] No "company account;" miners working 1-man drills.
[4] Not reported.
[5] Not including 14 boys who assisted 48 miners.
[6] No 1-man drills used.

Miners on contract work as well as those on company account or shift basis usually earn more using the one-man drill than they do using the two-man drill, especially after they have gotten used to the machine.

Each company involved in the strike was requested to furnish statistics showing the earnings of miners (in each case the same individual) using the one-man drill and using the two-man drill, or comparative statistics showing the earnings of miners both before and after the one-man drill was introduced. In the following table the statements are summarized so as to show the average earnings per day of miners using one-man and two-man drills and per cent of increase in earnings resulting from the use of the one-man drill. Following the table the statements of the companies in regard to earnings with the one-man and two-man drills are reproduced in full.

Comparison of average earnings per day of miners using one-man and two-man drills.

Mining company.	Two-man drill.	One-man drill.	Per cent of increase with one-man drill.
No. 1:			
Calumet & Hecla Conglomerate	$3.65	$4.02	10.14
Calumet & Hecla Amygdaloid	3.08	3.47	12.66
No. 2. Osceola	[1] 3.00	[1] 3.58	19.33
No. 3. North Kearsarge	[2]	[2]	[2]
No. 4. South Kearsarge	[2]	[2]	[2]
No. 5. Isle Royale	[1] 2.69	[1] 3.34	24.16
No. 6. Ahmeek	[1] 2.98	[1] 3.61	21.14
No. 7. Tamarack	3.24	3.83	18.21
No. 8. Allouez	[1] 3.02	[1] 3.70	22.52
No. 9. Superior	[2]	3.55	.....
No. 10. Centennial	[1] 2.71	[1] 3.52	29.89
No. 11. La Salle	[2]	3.93	.....
No. 12. Laurium	[1] 3.01	[1] 3.26	8.31
No. 13. Baltic	[1] 2.71	[1] 3.23	19.19
No. 14. Trimountain	[2]	[2]	[2]
No. 15. Champion	[2]	[2]	[2]
No. 16. Quincy	3.04	3.78 4.08 3.38	24.34 34.21 11.18
No. 17. Mohawk	3.10	3.47	11.94
No. 18. Wolverine	[2]	[2]	[2]
No. 19. Franklin	[1] 2.80	[1] 2.89	3.21
No. 20. Winona	3.13	3.45	10.22
No. 21. Houghton	[2]	[2]	[2]
No. 22. Mass	2.35	2.50	6.38
No. 23. Hancock	2.61	2.61	.....
No. 24. Oneco	2.61	[4]	.....
No. 25. Lake	3.16	3.57	18.93

[1] Average for a period of 6 months.
[2] No statistics available.
[3] Average for a period of 3 months.
[4] No one-man drills used.

CALUMET & HECLA MINING CO.

In the Conglomerate mine the average earnings of miners on two-man drill were $3.65; of miners on one-man drill, $4.02. In the Amygdaloid mine the average earnings of miners on two-man drill were $3.08; of miners on one-man drill, $3.47.

OSCEOLA CONSOLIDATED MINING CO.

All miners using the two-man drill during the last half of 1912 earned $147,231.80 for 49,038 days, or $3.002 per day. All miners using the one-man drill during the first half of 1913 earned $62,326.93 for 17,397 days, or $3.582 per day. The increase is 19.33 per cent in favor of miners using the one-man drill.

ISLE ROYALE COPPER CO.

The earnings of miners on the two-man drill during the last six months of 1912—34,031 days—were $91,693.43; average per day, $2.69 for 26 days, $2.92 for 24 days (time actually worked). The earnings of miners on the one-man drill during the first six months of 1913—11,259¾ days—were $37,598.75; average per day, $3.34. Per cent increase, 14.4.

AHMEEK MINING CO.

The average earnings of miners stoping, drifting, and drift stoping with the two-man drill for the last six months of 1912 were $2.98 per day. The average earnings of miners stoping, drift stoping, and drifting with the one-man drill for the first six months of 1913 were $3.61 per day. The per cent of increase in favor of the one-man drill is 21.14.

TAMARACK MINING CO.

The earnings of miners using the one-man drill 837 shifts were $3,205.11, an average of $3.83 per shift. The earnings of miners using the two-man drill 20,773 shifts were $67,269.55, an average of $3.24 per shift. This shows 18.21 per cent increased earnings in favor of the one-man drill.

ALLOUEZ MINING CO.

The average earnings of miners using the two-man drill during the last six months of 1912 were $3.02 per day. The average earnings of miners using the one-man drill during the first six months of 1913 were $3.70 per day.

SUPERIOR COPPER CO.

In 1909 and 1910 when the two-man machine was used exclusively, $2.54 per shift was company-account pay. On the same shift basis with the one-man machine, company-account pay was $3.02, but due to the introduction of the contract system and gradual improvement of the one-man machines, the average of all miners using one-man machines exclusively was $3.55 per day for the first six months in 1913.

CENTENNIAL COPPER MINING CO.

The average earnings of miners using the two-man drill during the last six months of 1912 was $2.71. The average earnings of miners using the one-man drill during the first six months of 1913 was $3.52.

LA SALLE COPPER CO.

No statistics of comparative earnings on one-man and two-man drills are available. The average daily earnings for work done on one-man drill in 1913 were $3.98.

LAURIUM MINING CO.

The earnings of miners on two-man machine during the last six months of 1912 were $3.01 per day. The earnings of miners on one-man machine during the first six months of 1913 were $3.26 per day.

COPPER RANGE CONSOLIDATED CO.

In general it has been our custom to pay men working on a company account basis with the Leyner drill $4 or $5 per month more than the company account rate on the two-man drill. Earnings on contract vary considerably even under uniform conditions, and it

would be inaccurate to attribute all of the difference between earnings of men on Leyners now to the difference in machines.

The pay rolls of the Baltic mine show the earnings of 12 miners during the six months from January to June, inclusive, 1912, when they were using two-man drills, and the earnings of the same 12 men during the three months, April, May, and June, 1913, when they were using one-man drills. The earnings for these men were as follows, the first figures in each case being the average for the first period and the second figures being the average for the second period: John Lasick, $2.79, $3.15; Mike Lassick, $2.79, $3.15; Mike Muhvich, $2.54, $3.24; Herman Keraven, $2.61, $3.27; John Harmainen, $2.75, $3.37; John Poak, $2.73, $2.91; Joel Kaugas, $2.89, $2.94; Herman Kaugas, $2.69, $3.48; Charles Johnson, $2.75, $2.87; Appo Lythenen, $2.42, $3.48; Carl Stark, $2.74, $3.48; John Raisanen, $2.75, $3.48.

QUINCY MINING CO.

Men Nos. 3981, 3338, 3034, and 3040, in contract No. 12, using one-man machines in drifting and stoping work, over a period of six months, averaged $4.08 per day each; same men with two-man machine earned $3.04 each. Men Nos. 4223 and 4365, in contract No. 191, averaged $3.78 per day each for a period of six months; same men with double machine earned $3.04. Twenty-one men on stoping work averaged $3.38 per day each against $3.04 with double machine.

MOHAWK MINING CO.

The average earnings of Thomas Ellis, on a two-man machine prior to August, 1912, were $3.10 per day. The average earnings of the same man on a one-man machine from August, 1912, to June, 1913, were $3.47 per day.

WOLVERINE COPPER MINING CO.

The one-man drill has not been in use a sufficient time to enable us to form a comparison.

FRANKLIN MINING CO.

Following are the average daily earnings of four miners using the two-man drill from July to December, inclusive, 1912, and the average daily earnings of the same men using the one-man drill during the next six months. The figures first given show the average for the first period and the second figures show the average for the last period: Peter Horwhat, $3.10, $3; Ben Horwhat, $3.10, $2.78; Mike Kochin, $2.49, $2.98; Ed Isojarvi, $2.50, $2.78.

WINONA COPPER CO.

For the first six months of 1912 Samuel Phillips and Benjamin Hocking were drifting on the thirteenth level, south, of No. 4 shaft. They used an Ingersoll-Rand 3½-inch two-man drill, and made an average of $3.13 per day during this time. These same men started

the first Leyner one-man drill and used it in drifting at the same place. Their average wages for the last six months of 1912 were $3.45 per shift. The cost of miners' labor per foot of drifting with the two-man drill was $4.12; the cost of drifting with the one-man drill was $2.99.

MASS CONSOLIDATED MINING CO.

When two-man drills were used exclusively the wages were $2.25 per man per shift, net. After the one-man drill was introduced, the wages of men on the few two-man drills in use were increased to $2.35, while the wages of men on one-man drills were established at $2.50 per shift. A bonus system was introduced for work done by men using stopers, whereby men were paid a bonus for all drilling over and above an average of 50 feet per day of drilling per shift during the month. Under this system the highest wage earned has been $3.15 per shift.

HANCOCK CONSOLIDATED MINING CO.

The monthly wages are $68 for miners on one-man drills, and the same for miners on two-man drills.

ONECO COPPER MINING CO.

The wages of miners on two-man drills are $68 per month (26 working days). No one-man drill used.

LAKE COPPER CO.

The daily average earnings of all miners doing drifting and crosscutting on contract from May, 1911, till the strike was as follows: Men on large machines, $3.16 per day; men on small machines, $3.57 per day.

DEDUCTIONS FROM EARNINGS.

All companies make deductions from the earnings of miners on contract work for oil used to lubricate the drills, for dynamite, fuse and caps used in blasting, and for carbide used in acetylene lamps. Miners that work "on company account," or monthly basis, are not charged for these materials.

One company charges the miner not only for these things, but for other articles that they use, the price for each being as follows:

Powder (dynamite), $10 a box of 50 pounds; fuse, $10 per 1,000 feet; caps, $2 a box of 100; steel (i. e. the weight of the drills worn by use), 10 cents a pound; machine oil, 25 cents a gallon; quart oil can, 35 cents; acetylene lamp, 75 cents; old-fashioned lamp, 25 cents; wrenches, $1 each. Trammers are charged for pick handles, 25 cents each; for shovels, $1 each. This company also charges men 50 cents a month for the use of the dry house, where the men change their clothing.

All companies make a deduction from the earnings of employees for medical attention and medicines. The charge is $1 per month for married men and 50 cents for single men, and married men are entitled to medical treatment for dependent members of their families. The

Mass Co. and Lake Co. are the only two that make additional charge for obstetrical cases.

Most of the mining companies deduct 50 cents a month from the earnings of each employee for a sick-benefit fund, also called an "aid fund," and often called a "club." From this fund payment is made to employees who are ill at the rate of $1 for each working day, or $25 per month. Usually payment begins on the sixth day of illness, but if the patient is ill for 20 days payment per day is made from the beginning of the illness. The Michigan State law provides that in case of accident to an employee at work he shall be paid compensation after 14 days of disability. The employees of some companies who are injured by accident are paid $1 for each working day, beginning with the sixth day of disability and continuing until compensation begins on the fifteenth day. Out of the aid fund of several companies the heirs of an employee who dies from an accident are paid $200 or $250. The companies do not contribute to the aid funds, but on account of the large amounts in the aid-fund treasuries the Calumet & Hecla, Osceola, Ahmeek, and Isle Royale companies have made no deductions for this purpose since August, 1912. The only companies which reported that they had no aid funds were the Quincy, Franklin, Hancock, and Oneco companies.

The companies that have hospitals charge $7, $10, or $13 a week for hospital service, including board and the attention of a physician and nurse. Employees who are accidentally injured, so that hospital treatment is necessary, are not charged for the first three weeks they are in the hospital, as provided by the Michigan compensation law, but after three weeks they are charged at the rate of from $20 to $40 a month. The Copper Range Co. reports: "No deductions made for hospital service to employees, whether required on account of disease or accident, but for members of an employee's family in the hospital $1 per day is collected." The Hancock and Oneco companies report: "Hospital care is provided gratis by company until employee's recovery. Same is true of members of employee's family." The Mass Co. reports: "Hospital expenses are provided until such time as patient is discharged by physician." The Quincy Co. reports: "Hospital expenses provided as long as necessary." The Osceola Co. reports: "In frequent cases all hospital charges are canceled by the company when the employee is in poor financial condition."

Deductions from earnings are made on pay day for rent of houses occupied by employees, and for coal, wood, or electric lights that the company may furnish to them.

THE WESTERN FEDERATION OF MINERS.

The Western Federation of Miners is the only organization of mine workers in the metal mines of North America. It was organized at Butte, Mont., May 19, 1893. The preamble and first article of its constitution follow:

PREAMBLE.

1. We hold that there is a class struggle in society, and that this struggle is caused by economic conditions.

2. We affirm the economic condition of the producer to be that he is exploited of the wealth which he produces, being allowed to retain barely sufficient for his elementary necessities.

3. We hold that the class struggle will continue until the producer is recognized as the sole master of his product.

4. We assert that the working class, and it alone, can and must achieve its own emancipation.

5. We hold, finally, that an industrial union and the concerted political action of all wageworkers is the only method of attaining this end.

6. Therefore we, the wage slaves employed in and around the mines, mills, smelters, tunnels, open pits, and open cuts have associated in the Western Federation of Miners.

ARTICLE 1.

SECTION 1. This organization shall be known as the Western Federation of Miners, and shall be composed of all persons working in and around mines, mills, smelters, tunnels, open pits, and open cuts organized into unions paying per capita tax to the federation.

SEC. 2. The objects of this organization shall be to unite the various persons working in and around the mines, mills, smelters, tunnels, open pits, and open cuts into one central body, to practice those virtues that adorn society and remind man of his duty to his fellow man, the elevation of his position, and the maintenance of the rights of the workers to increase the wages and improve the conditions of employment of our members by legislation, conciliation, joint agreements, or strikes.

SEC. 3. Whenever 20 or more persons working as specified in section 1 of this article shall be found that will be self-supporting, they shall, on application, be granted a charter. Provided that no charter shall be issued the effect of which is to segregate the crafts engaged in the mining industry.

Following is a copy of the blank which mine workers are required to sign on application for membership:

WESTERN FEDERATION OF MINERS.

APPLICATION BLANK.

Union No.....
Name.....
Age..... Complexion.....
Height..... Color of eyes.....
Name and address of nearest relative.....
.....
Have you ever been a member of organized labor?.....
When and where?.....
.....
What organization?.....
Where have you worked during the past five years?.....
.....
Have you ever taken the place of strikers?.....
Have you ever assisted in putting scab labor in the place of strikers?.....
Have you ever assisted as a deputy sheriff, Pinkerton man, or in any manner assisted corporations or individuals to oppose the demands of organized labor?.....

Our motto—"Justice to all."

I hereby voluntarily pledge and obligate myself on my word of honor that the above is a true and correct statement in answer to the questions asked, and I further promise to obey all laws and lawful summons of the W. F. of M. that may be now or hereafter in existence.

.....Applicant.

Proposed by.....

N. B.—Initiation fee must accompany application.

Applicant..... Rejected .....191....
Application made.....191.... Initiated .....191....
Elected .....191.... .....Union No....
..... *Secretary.*

N. B.—Secretaries receiving this blank from applicant must have same kept on file for future reference.

Statistics published in the Official Proceedings of the Twentieth Annual Convention, Western Federation of Miners, show that on March 31, 1912, the membership was 38,016.[1] The officials claim that in 1913 the membership was over 45,000. The official organ of the Western Federation of Miners is The Miners' Magazine, published weekly in Denver. Each issue contains a directory of the local unions of the organization. The issue for August 7, 1913, shows that the number of local unions was 180. The federation was established in 22 States, and in each of these States and in Alaska, British Columbia, and Ontario, the number of local unions was as follows:

Alaska, 6; Arizona, 11; British Columbia, 14; California, 10; Colorado, 18; Idaho, 8; Illinois, 3; Kansas, 6; Kentucky, 1; Michigan, 13; Minnesota, 1; Missouri, 16; Montana, 19; Nevada, 21; New Jersey, 4; New York, 1; New Mexico, 1; Oklahoma, 2; Ontario, 8; Oregon, 1; South Dakota, 3; Texas, 1; Utah, 7; Washington, 3; Wisconsin, 2.

The Western Federation of Miners was affiliated with the American Federation of Labor from 1896 to 1898, and the affiliation was renewed in 1911. Further details about the history of the Western Federation of Miners are given in the following extract from the report of its president, Charles H. Moyer, to the twentieth annual convention, held in 1912:[2]

> The tenth annual convention of the Western Federation of Miners declared in favor of a policy of independent political action and a vigorous policy of education along the lines of political economy. Do sound industrial unionists desire to change this policy? If not, then I reiterate that the advocates of a change in our policy are not sincere, but that, while attacking our policy and offering nothing substantial to take its place, their sole aim is to again change our attitude in the labor movement.
>
> Going back to the inception of our federation, we find that we were organized in 1893, and for three years, or until May, 1896, we were an independent organization—that is, we held no affiliation with any national organization of labor. In 1896 it was decided to change our attitude and affiliate with the American Federation of Labor. This affiliation continued until 1898, when we again changed our position by discontinuing such affiliation and attached ourselves to what was then known as the Western Labor Union. I shall not go into the history of the Western Labor Union; suffice to say that our affiliation continued until its dissolution, in 1905, and that it was formed on the industrial-union plan.
>
> In 1905 our organization, in convention, realizing that the Western Labor Union had failed, took part in initiating another movement, known as the Industrial Workers of the World. While the working policy of this organization differed in some respects from the Western Labor Union, yet the idea of organizing the workers in industries was identical. The Western Federation of Miners continued to take an active part in the affairs of this organization until its second annual convention, when developments in its management were such as to cause a referendum vote to be initiated in our federation, which resulted in its repudiation, the membership declaring by their ballot that it should not longer be recognized as a bona fide labor organization; and so, in 1908, the Western Federation of Miners again changed its attitude, and was without affiliation until May 9, 1911, when it reaffiliated with the American Federation of Labor.
>
> During this entire period the miners' organization adhered strictly to its idea of industrial organization, yet during that time we, as stated, on seven different occasions changed our attitued in the labor movement. Has this been for the best interest of the men of the mines? Has our organization prospered because of these various changes? Have they been a medium for the organizing of the workers of our industry? Let us in all seriousness ask ourselves, and especially those who are loud in their denunciation of the present attitude of our union, whether it might not have been well for the metal miners to have adhered more strictly to a definite position, as has our sister organization, the United Mine Workers of America?

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[1] Page 173. [2] Pages 4–6

Between 1897 and 1899 there was organized in Michigan what was known as the Northern Mineral Mine Workers. It had local unions throughout the iron district of Michigan and the lead districts of Missouri, and was affiliated with the American Federation of Labor. It went through several strikes which were unsuccessful and reduced its membership to zero. In 1904 this organization applied to the Western Federation of Miners to become a part of that organization. The convention of the Western Federation of Miners held in 1904 accepted the proposition, and took over such locals as had been established in Michigan and Missouri.

Prior to 1904 the eastern boundary of the Western Federation of Miners was the Missouri River. The Northern Mineral Mine Workers had no organization in the copper district of Michigan, but in the same year, after its amalgamation with the Western Federation of Miners, local unions were formed in practically all of the mining camps of Michigan and especially in the copper district. On account of lack of interest these locals became extinct in the latter part of 1906 or early in 1907.

During 1908 communications were sent to the headquarters of the Western Federation of Miners in Denver, asking for organizers to be sent to the iron and copper mining districts of Michigan. Organizers were sent and local unions were again organized. In 1913 there were five local unions in the Michigan copper district. The numbers of these unions, their names, and the dates when they were organized are as follows: 203, Copper (Calumet), November 22, 1908; 200, Hancock Copper, February 14, 1909; 196, South Range, May 22, 1909; 215, Mass City, May 8, 1912; 129, Keweenaw, May 30, 1913.

THE VOTE FOR A STRIKE.

The Western Federation of Miners was never recognized by any of the copper-mining companies in Michigan. The members became dissatisfied with their working conditions and began in 1912 to agitate the question of making demands on the companies for improved conditions and of striking, if necessary, to secure the demands. Their organization, however, was not complete, and for prudential reasons the general officers of the federation in Denver endeavored to restrain them from hasty action. President Charles H. Moyer wrote from Denver to Thomas Strizich, a national organizer at Calumet, Mich., on March 25, 1913, as follows:

> I was much pleased to hear of the progress being made in the way of organizing in Michigan and sincerely trust that the men there will realize the importance, in fact the absolute necessity, of deferring action that may precipitate a conflict with the employers until they have practically a thorough organization.

The organized copper-mine workers in Michigan insisted that their working conditions should be remedied, even if a resort to a strike should be necessary. The provisions in the constitution of the Western Federation of Miners for calling a strike, section 1 of Article VIII, is as follows:

> SECTION 1. It shall be unlawful for any union to enter upon a strike unless ordered by two-thirds of the votes cast upon the question; such questions shall be decided by referendum vote, notice of such referendum to be posted three days in advance, vote to be by ballot, and polls to be open for not less than eight hours. No call shall be made for a referendum vote on a strike until after having received the approval of the executive board of the Western Federation of Miners.

In June, 1913, slips were issued to all members of the five local unions of the Western Federation of Miners in the Michigan copper range, asking them to answer the following questions:

Do you think the union should demand better conditions now?
How many weeks could you support yourself without calling for relief?
Are you a member of a building and loan association? What are your monthly payments?
If a strike vote is taken, will you put $5 in the union defense fund?
Name.

A large majority of the answers were in favor of making a demand for better working conditions immediately. The officers of the Western Federation of Miners in Denver were anxious that there should be no strike in the Michigan copper district until the mine workers should be more completely organized, and especially until more of the surface men and some of the stamp-mill and smelter men should be organized. They urged that it would be better not to strike until April, 1914, when it was expected that the membership would be much increased, and when there would be six months of good weather ahead. The mine workers, however, were so insistent that immediate measures should be taken to secure better conditions that the executive board of the Western Federation of Miners reluctantly consented to a referendum vote being taken on the question of asking for a joint conference with the employers, or of calling a strike in case a conference should be refused and no concessions granted. The executive board consisted of seven members—Charles H. Moyer, president; C. E. Mahoney, vice president; Ernest Mills, secretary-treasurer; J. C. Lowney, Yanco Terzich, William Davidson, and Guy E. Miller. At the time that a referendum vote was approved, President Moyer was in Europe, in attendance on an international labor congress.

Printed ballot slips were issued by the president and secretary-treasurer of district 16, which was composed of the five local unions of the Western Federation of Miners in the Michigan copper range. The form of the ballot was as follows:

OFFICIAL BALLOT.

Following the instructions of the convention of the copper district union held on June 29, we hereby submit the following questions for referendum vote of the members of the local unions of the Western Federation of Miners in copper district of Michigan.

C. E. HIETALA, *Secretary-Treasurer.*
DAN SULLIVAN, *President.*

Shall the miners' unions, acting through the district union, ask for a conference with the employers to adjust wages, hours, and working conditions in the copper district of Michigan?

YES ☐
NO ☐

Shall the executive board of the copper district union, acting in conjunction with the executive board of the Western Federation of Miners, declare a strike if the mine operators refuse to grant a conference or concessions?

YES ☐
NO ☐

The polls were opened on July 1 and remained open in the hall of each of the five local unions until noon July 12. Notice of the referendum was given out at the regular weekly meetings of the locals on Tuesday, and each local appointed men to visit members at the various mine locations and remind them that a vote was being taken. The referendum was also advertised in the papers printed in foreign languages and published in the district. Announcement of the vote was not made in the three daily papers of Calumet, Houghton, and Hancock, as those papers are more or less indirectly controlled by the mining companies. Without doubt all members of the federation in the district were informed that they had the opportunity of voting on the two questions.

The statement of the federation officers is that 98 per cent of the votes cast were in the affirmative on each of the two questions proposed on the ballot. The federation officials claim that at the time of the strike, on July 23, 1913, there were nearly 9,000 members in the five local unions in the Michigan copper district. At some of the mines practically all of the workers, underground and on the surface, were members. At others, only the underground men and a few of the surface men were members. At the largest mines, however, those of the Calumet & Hecla Mining Co. and its subsidiary companies, where about two-thirds of all the mine workers in the district were employed, the number of members of the federation was much smaller in proportion to the total number of employees than at any other mines in the district. While definite figures are unobtainable, it is probable that not over half of the men employed underground by the Calumet & Hecla combination were members, and possibly the number did not exceed one-third, and of the men employed on surface work very few were members.

The Calumet & Hecla Co. is much the largest mining corporation in the district. It has in its employ nearly all of the Cornishmen and Scotchmen that are engaged in mining in the district. Most of these English-speaking persons occupy favored positions, as mine "captains" (i. e., foremen) and mine bosses. At all of its mines this company pays its workers higher rates than are paid at any of the other mines. It is well known that all of the mining companies were strongly opposed to the Western Federation of Miners, though previous to the strike no mine workers were discharged on account of their membership in that organization. The employees of the Calumet & Hecla Co. were better satisfied than were those of any other company, and therefore a much smaller proportion of them joined the federation.

BEGINNING OF THE STRIKE.

Before 1913 there had been but few strikes in the Michigan copper district and no general strike that involved all of the mines. All of the mines have been operated on the open-shop principle.

On July 14, 1913, the president and secretary-treasurer of district 16 of the Western Federation of Miners sent a letter to each of the mine managers, which notified them that the organized mine workers desired to "sell their labor collectively," and requested that a joint conference be held to discuss wages, hours of labor, and other working conditions. It also notified the managers that unless the request were granted the mine workers were ordered by a referendum vote to

strike. The letters to all managers were the same in form. A copy follows:

COPPER DISTRICT UNION,
WESTERN FEDERATION OF MINERS,
Box 217, Hancock, Mich., July 14, 1913.

To the Calumet & Hecla, Tamarack, Ahmeek, Allouez, Centennial, Superior, Laurium, Isle Royale, and all other copper mining companies connected with and under the management of Calumet & Hecla; James MacNaughton, manager.

GENTLEMEN: Your employees, organized into various unions of the Western Federation of Miners, have decided by referendum vote to ask that you meet their representatives in conference on some day during this month for the purpose of discussing the possibilities of shortening the working day, raising wages, and making some changes in the working conditions.

The men working in your mines are dissatisfied with the wages, hours, and other conditions of employment. Realizing that as individuals they would not have sufficient strength to correct these evils or to lessen the burden placed upon them, they have organized into the local unions of the Western Federation of Miners, and through the local unions they have formed one compact body of the whole copper district, with an understanding and hope that from now on they may be enabled to sell their labor collectively with greater advantage for themselves as well as their employers.

While the men have decided that they must have greater remuneration for their services and that the working day must be shortened, it is not their or our desire that we should have a strike, with all the sufferings that it is bound to bring to them, to the employers, and to the general public. On the other hand, we earnestly hope that the questions that have arisen between us would be settled amicably, with fairness and justice to both sides. Should you have the same feeling, we believe that the friendly relations that have existed between you and your employees in the past will continue in the future.

However, should you follow the example given by some of the most stupid and unfair mine owners in the past, the men have instructed us by the same referendum vote to call a strike in all the mines owned and controlled by your company.

We deem it unnecessary to set forth the facts and reasons for the demand for higher wages, shorter hours, and other things, in this letter, as we intend to do that in the conference—should you be fair enough to meet us.

We hope you realize that labor has just as much right to organize as capital, and that at this age these two forces, labor and capital, while their interests are not identical, must get together and solve the problems that confront them.

We expect to have your answer not later than on the 21st of this month. If you agree to meet us our representatives will be ready for a conference on any day and at any place you may choose; provided you do not set the date any later than the 28th of this month.

Your failure to answer this will be taken as a proof that you are not willing to meet us and to have the matters settled peacefully.

Hoping to hear from you soon, we remain,
Respectfully, yours,

DAN SULLIVAN.
President Copper District Union of the Western Federation of Miners.
C. E. HIETALA,
Secretary Copper District Union of the Western Federation of Miners.

Address all communications to C. E. Hietala, box 217, Hancock, Mich.

It will be noticed that this letter did not mention a minimum wage, but a circular addressed by the president and secretary-treasurer of district 16 "To organized labor, its friends and sympathizers," and dated Hancock, Mich., August 15, 1913, said:

On the 23d of July, 1913, the greatest strike in the history of American metal miners began in the copper district of Michigan. Fifteen thousand men in and around the mines laid down their tools, demanding recognition of the union, an eight-hour day, a minimum wage of $3 for all underground workers and engineers, with an increase of 35 cents per day for surface employees. Also that two men shall be engaged in the operation of all mining machines.

A circular issued by Charles H. Moyer, president of the Western Federation of Miners, and dated August 25, addressed to the officers

and members of all local unions of that organization, said that the strikers asked for "a minimum of $3" per shift.

The letters sent by the president and secretary-treasurer of district 16 to the managers, dated July 14, and asking for replies by July 21, were registered and sent by special delivery. The letter to the Quincy Mining Co. was returned unopened. The other companies made no reply by July 21 or afterwards.

At a meeting of district 16 on July 22 a strike was called immediately, and each of the five local unions in the district was notified. The strike began in most mines on the morning of July 23, but in others it did not begin until the beginning of the night shift on that day. By July 24 all mining work was suspended in all mines in the Michigan copper range, except two very small mines, those of the White Pine Copper Co. and the Victoria Copper Mining Co., which are at the extreme southern end of the range, where the federation had effected no organization. At the mines that were involved in the strike the number of employees on July 22, the day before the strike, was reported as follows:

HOUGHTON COUNTY.

Calumet & Hecla Mining Co	4,107
Allouez Mining Co.[1]	308
Centennial Copper Mining Co.[1]	118
Isle Royale Copper Co.[1]	709
La Salle Copper Co.[1]	43
Laurium Mining Co.[1]	25
Osceola Consolidated Mining Co.[1]	978
Superior Copper Co.[1]	162
Tamarack Mining Co.[1]	543
Copper Range Consolidated Co.	2,716
Quincy Mining Co.	1,800
Wolverine Copper Mining Co.[2]	344
Franklin Mining Co.	322
Winona Copper Co.[3]	293
Houghton Copper Co.[3]	23
Hancock Consolidated Mining Co.[4]	161
Oneco Mining Co.[4]	25
	12,677

KEWEENAW COUNTY.

Ahmeek Mining Co.[1]	585
Mohawk Mining Co.[2]	686
	1,271

ONTONAGON COUNTY.

Mass Consolidated Mining Co.	176
Lake Copper Co.	154
	330
Total in the three counties	14,278

[1] Subsidiary to the Calumet & Hecla Mining Co.
[2] Wolverine Co. and Mohawk Co. have same management.
[3] Winona Co. and Houghton Co. have same management.
[4] Hancock Co. and Oneco Co. have same management.

The strike also affected the mines of the Indiana Mining Co., North Lake Mining Co., South Lake Mining Co., and Algomah Mining Co., in Ontonagon County, and the Cliff Mining Co., Gratiot Mining Co., and Seneca Mining Co., in Houghton County. These mines are in the early stages of development and employed about 250 men.

Of the 14,528 employees of these companies on July 22 (including the 250 employed by these "prospect" mines) about 11,700 worked underground, and the remainder on the surface. Underground work came to a complete standstill, and this caused practically all of the surface men to be idle. As before stated, the Western Federation of Miners was not largely organized among the surface men. It was not at all organized at the stamp mills and smelters located on lakes several miles from the mines. No employees at the stamp mills and smelters struck, but these employees, numbering about 1,500, were also compelled to be idle after the supply of rock on hand had been stamped and smelted.

Many of the employees of the Calumet & Hecla Mining Co., the largest mining company in the district, had not joined the Western Federation of Miners, and when those who were not members started to go to work, on the morning of July 23, they were attacked by the strikers. The strikers assembled in large crowds at the various shafts to prevent men going to work, and serious riots occurred in which the men going to work were struck with rocks and clubs. Many employees of the company had been sworn in as deputy sheriffs, but they had no firearms. The strikers overpowered these deputies, took away their badges, and in some cases beat them. Rioting continued on July 24. Following is a list of the company's employees who were injured sufficiently to be taken to the company's hospital:

No. 3718. Andrew Ristvedt; age, 67; sprinkler; 4317 Oak Street; injured July 23 at Calumet Dry; he had his dinner pail taken away from him; strain of tendons of right wrist.

No. 10999. Gabriel Popovich; age, 44; timberman; 25 Second Street, Tamarack; injured July 23 at Hecla No. 6; attacked and struck over head and left shoulder; scalp wound 1 inch long; contusion of left shoulder; disabled from July 24 to August 7.

No. 750. William J. Thomas; age, 45; captain; 823 Rockland Street; injured July 23 at Calumet No. 4; struck on head with his dinner pail; right ear hemorrhagic; lost no time.

No. 2914. Thomas Matthews; age, 49; captain; 277 Rockland Street; injured July 23 at Calumet No. 2; attacked by strikers and hit on head behind right ear, swelling behind right ear extending down on neck; disabled from July 23 to August 27.

No. 6509. Kenneth McLeod; age, 49; watchman; Palace Hotel, Laurium; injured July 23 at Red Jacket shaft; hit by thrown rock while resisting attempt of strikers to gain entrance to engine house; contusion of right eye, fracture of nose, punctured wound about nose and over right eye; disabled from July 23 to August 26.

No. 6158. Edwin Danbom; age, 31; drill sharpener; 273 Rockland Street; injured July 24 at drill shop; two cuts on head from club or rock, bruised shoulder resulted from kicks, two scalp wounds 2 inches and 1½ inches long, contusion of left shoulder; disabled from July 24 to August 11.

No. 639. John T. Hand; age, 41; miner; 524 Florida Street; injured July 24 at Calumet No. 4; struck by piece of gas pipe; contusion of left side of chest with fracture of eleventh rib; still disabled September 11.

No. 7921. William T. Richards; age, 66; blaster; 1806 Cemetery Street; injured July 24; injured by strikers; two scalp wounds and contusions of back; disabled from July 24 to August 31.

No. 892. Anton Miglia; age, 50; miner; 1607 Laurium Street; injured July 24 at Calumet No. 4; hit on thumb with a stick; contusion of left thumb; disabled from July 24 to August 1.

No. 7977. John T. Harry; age, 51; miner; 2465 C Street; injured July 24 by strikers; struck with clubs and rocks; abrasion of left cheek, contusion of right shoulder; disabled from July 24 to August 4.

No. 2165. Frank Traven; age, 36; lander; 569 Cedar Street; injured July 24 at No. 16 shaft; beaten, kicked, and trampled on; contusion of head, chest, back, and legs; disabled from July 24 to August 25.

No. 2989. Simon Trestrial; age, 69; blacksmith; 2367 A Street; injured July 24 by strikers; scalp wound; disabled from July 24 to August 11.

No. 13158. Michael Maurin; age, 31; timberman; Elm Street; injured July 24 near Calumet No. 2; was chased by strikers and struck on head with a stick; scalp wound 1 inch long; disabled from July 24 to August 4.

No. 3002. William Sody; age, 47; machinist; 200 Rockland Street; injured July 24 at Calumet No. 2; scalp wound from a stick, two blows on back from rocks, scalp wound 3 inches long, contusion of back; lost no time.

No. 1183. J. M. Betzing; age, 46; foreman, RR.; 1514 Hecla Street; injured July 24 near Calumet No. 2; struck with iron bar above left elbow and across right shoulder with a board; contusion of left arm and right shoulder; disabled from July 24 to August 4.

No. 1020. George Unsworth; age, 54; mechanic; 128 Calumet Avenue; injured July 24 near Calumet No. 2; struck by a rock on head and hit on body with an iron bolt; scalp wound, abrasions of both knees, contusions of body; disabled from July 24 to August 1.

No. 1886. Jos. Gazvoda; age, 43; deputy; 4034 Oak Street; injured August 20 on Oak and Tenth Streets; was attacked and struck on head; scalp wound 1½ inches long; bruise between shoulders; disabled from August 20 to 26.

CONTINUATION OF THE STRIKE.

In anticipation of the strike some mine workers left the district before it began, and many others, probably 1,000 in all, left afterwards. They went to the iron mines in Michigan and Minnesota, some got employment from the timber companies, and many worked as harvest hands in Michigan and neighboring States. Some found work in building county roads in Houghton County.

After the arrival of the troops, on July 25, the strike was very quiet for two weeks. The strikers were overawed by the army of soldiers and by the Waddell men and the large number of deputy sheriffs. The deputies were provided with heavy "night sticks" and with revolvers. There was, however, no occasion for disorder during these two weeks, as during that time no effort to resume work was made by any of the mining companies. The strikers hired halls, held public

meetings, and paraded daily through the village streets, over county roads, and over some roads on company property which had long been regarded as public roads. The paraders included many women and children. They carried United States flags and the larger parades were headed by a brass band. The inscriptions on some of the placards carried in the parades were as follows:

Toiling 6,000 feet below, we want more light, more money.
Western Federation of Miners' headquarters—Denver.
Calumet & Hecla headquarters—Boston.
Waddell thugs' headquarters—Sing Sing.

In Calumet and also in Houghton a large rink was rented for special occasions, when addresses were made by labor leaders. These included at various times President Charles H. Moyer and Vice President C. E. Mahoney, of the Western Federation of Miners; John Mitchell, formerly president of the United Mine Workers of America; John B. Lennon, treasurer of the American Federation of Labor; John M. Walker and John L. Lewis, of the mining department of the American Federation of Labor; Emmett Flood, an organizer of the American Federation of Labor; and Mrs. Mary Jones, who has been a prominent character in many strikes and who is affectionately called "Mother Jones." They addressed audiences of from 4,000 to 6,000 people. At all meetings speeches were made in various languages.

At the beginning of the strike the mine managers began holding semiweekly meetings at the Houghton Club in Houghton. They insisted that they had not formed a mine managers' association, but they acted together on all matters relating to the strike.

The three daily papers published in English in Houghton County espoused the views of the mine managers, maintained that labor conditions in the dictrict were better than in any other mining district, asserted that no good reason for dissatisfaction existed, and, taking the cue of the mine managers, roundly condemned the Western Federation of Miners as a lawless organization. They called the national officers and organizers of the federation "Western agitators," and put all the blame on them for the strike.

Having no local medium for presenting the labor side of the controversy, except a socialistic daily published in the Finnish language, and some weekly papers printed in other foreign languages, the Western Federation of Miners started a paper of its own. It was called the Miners Bulletin, and it was published triweekly and distributed broadcast free. The first issue was on August 9. The editor was Guy E. Miller, of the executive board of the federation, but articles were contributed by various other leaders.

This paper represented the Michigan copper mines as the richest in the world, but with the worst labor conditions, because of low pay, long hours, and the depth of the lower levels. It roundly denounced the Waddell "gunmen," the deputy sheriffs, and the "scabs." It criticized the discipline of the troops and the conduct of the soldiers. It severely criticized Gov. Ferris for sending the troops to the district, and for not forcing arbitration on the mine managers, for not coming to the district to investigate the strike personally, and for not calling an extra session of the legislature to take measures for settling the strike.

A meeting of former employees of the Calumet & Hecla Mining Co. who had been thrown out of work on account of the strike and who were not members of the federation, was held on August 7 in the Washington School Building, a public schoolhouse, built by the company and rented to the township. These nonunion employees declared that they wished to return to work, and they appointed a committee to wait on General Manager MacNaughton and inform him of their wish, but also to ask that the working time be reduced to eight hours per shift, that the minimum wage be $3.50 for miners and $3 per shift for trammers and timbermen, with double pay for Sunday work, and that two men or one man and a boy work on each drill.

The officials of the Calumet & Hecla Co. and of other mining companies had always asserted that they would give a hearing to employees, individually or through committees, and would consider any grievances they might present. General Manager MacNaughton received the committee of nonunion men, but refused to grant any of the requests they presented. In reply he said that they asked for more even than the federation had asked for; and furthermore said that he could not afford to make any concession at that time, because if he yielded on any point the federation would claim that it had won a victory.

For several days meetings were held in the school building, and those who attended decided, though their requests for improved conditions had been refused, to go back to work if protection were afforded them. Registration slips were provided for former Calumet & Hecla employees to sign. The heading on these slips was as follows:

CALUMET, MICH., *August 8, 1913.*

We, the undersigned employees, hereby petition the management of the Calumet & Hecla Mining Co. to resume work at the earliest possible date and to furnish such protection while working as may be necessary.

During the following week the registration list was kept open, and by signing it hundreds of employees signified their desire to return to work without conditions, except that they should receive protection. The following paragraph is clipped from the Houghton and Calumet Daily Mining Gazette of August 9, a paper which strongly opposed the strike and the Western Federation of Miners:

It is significant that nearly all of the men signing the list are miners, timbermen, pump men, shaft men, laborers, and surface employees, and the situation seems to be narrowing down to a strike of the trammers. If necessary the other employees are willing to do tramming until trammers can be hired.

A meeting of former employees of the Quincy Mining Co. who wished to return to work was held on August 8, and they adopted the following resolutions and presented them to the management:

Resolved, That we as employees are not and have not at any time been in favor of the present strike, which was caused by outside agitators and organizers from the Western Federation of Miners, who have been working in this district to stir up discontent and who have brought about present conditions.

Resolved, That we ask the Quincy Mining Co. to be allowed to return to work at once or as soon as possible. Many good employees have been forced to join the Western Federation of Miners under various threats. The strike was started largely against their will and we believe they will continue to remain loyal employees and should be permitted to return to work. On the other hand, many men who are members of the Western Federation of Miners who have sought by threats of violence and bodily harm to our families and ourselves and damage to our property to prevent our return-

ing to work should not be allowed in the mines, as we do not care to be forced to work beside such men, who have threatened us and are liable to again stir up strife and violence.

Within a week work was resumed by several hundred men in the mines of the Calumet & Hecla Co., but a large number of these men were mine bosses, and many of them and also many who had been miners before the strike were required to do tramming. About the same time some work was resumed at the mines of the Quincy Mining Co., and a little later at the mines of the Copper Range Consolidated Co. These three companies, which are the largest in the district, were the first to resume work, but the number of men that returned to work at the Quincy and the Copper Range mines was small and continued to be small for a month or more. All men who were taken back to work were required to quit the Western Federation of Miners if they belonged to it and were required to promise to have no future connection with that organization.

About the middle of August the employees of the mining companies and the strikers were paid for the work they had done in July. The strikers were paid for three weeks' work. About September 1 the five local unions of the Western Federation of Miners began paying money to the strikers for the support of themselves and their families. Before this was done members were required to fill out an inquiry blank, showing the number of members in the family of each. The form of the blank follows:

INQUIRY BLANK.

Name.....
Nationality.....
Residence.....
Married: Yes [....]. No [....].
Wife's name.....
Are you willing to send children away? Yes [....]. No [....]. If so, how many....
Ledger .....; page .....

Names of children or other supported relatives.	Girl (woman).	Boy (man).	Age
Total			

Remarks:.....

No children of strikers were sent away from the district up to November 1. The aid given to each member of the federation depended on the number in his family and on his financial condition. Single men who were not employed were paid $3 a week and married men as much as $10. The money with which strike benefits were paid came from the national treasury of the Western Federation of Miners in Denver and from various other sources. The local unions of the federation in Butte, Mont., levied an assessment of $2 per capita per month on their 8,000 or 9,000 members. The unions of the United Mine Workers of America in Illinois, the organization of coal miners, contributed $100,000. On September 29 the execu-

tive council of the American Federation of Labor issued an appeal to all organized labor to support the strike, and called on each local union to make an appropriation of not less than 5 cents for each of its members for the benefit of the strikers in the Michigan copper district. As the American Federation of Labor has over 2,000,000 members, this appropriation should amount to over $100,000. The appeal of the executive council follows:

WASHINGTON, *September 29, 1913.*

To all organized labor:

Each new advance in human betterment leaves its furrows of pain and suffering across human hearts and lives. There is scarcely a worker in all America who does not know the meaning of a strike, during which the workers and their families have suffered and endured in order to obtain justice, or who has not felt the terrible fear for the physical safety of loved ones in the thick of the contest, or the heartbreaking pain because of inability to supply even the barest necessities of life for those dependent upon him. To you, members of organized labor, the brave struggle of the copper miners of Calumet, Mich., will appeal with greatest effect.

After exhausting all other means of securing the just demands which they made upon their employers, these miners laid aside their tools on July 23 and went out on strike. They had been working a so-called 10-hour day, which in reality was an 11-hour day, for wages that would not permit American standards of living. Miners have been forced to handle individually heavy drilling machines which had formerly been operated by two men. After considering all matters, the men decided to demand an 8-hour day, $3 as the minimum wage, and two men to handle drilling machines, as formerly. All requests for conferences or consideration of these just demands were ignored and treated with contempt.

Despite the fact that the strike was inaugurated peacefully and has been conducted by the miners without even the slightest show of violence, seldom has there been such a display of arbitrary methods on the part of the mine operators and governmental authorities. The morning after the strike began hundreds of deputies were sworn in; the employers imported companies of Waddell-Mahon guards; finally State troops were sent to the mining district that the mine owners might be enabled to operate their mines and the voice of labor in its appeal for justice might be silenced. All of this display of force was under the pretense of protecting property (when the miners did not attack it nor contemplate attacking it); when the miners attempted to protect and promote human rights they were ridden down in the streets, clubbed, fired upon.

Though there have been the usual efforts to foment strife and to stir up violence among the strikers, yet no property has been destroyed, and the miners have remained steadfast in their determination to win their rights, and in their determination not to be forced into lawlessness.

The officials of the miners asked for an injunction restraining the appointment of additional deputies to serve the mine operators. Their request was refused. The mine operators asked for an injunction restraining the strikers from picketing, "molesting," men going to or from work and from parading in the vicinity of the mines. That order was granted.

Such are the conditions under which these copper mines are waging their fight for justice and a life somewhat better worth living. With all the forces of capital and organized society working against them, they have maintained courage, determination, and good spirit. There are 16,000 miners engaged in this struggle. A large number of miners and their families were evicted from their homes, owned by the corporations. The lives, safety, and welfare of something like 50,000 men, women, and children are bound up with its fate. The strike has now been in progress for over two months, and still the mine operators maintain stubborn resistance and unreasonable refusal to consider the demands of the men. The long, hard winter of northern Michigan is approaching, and these brave men, women, and children who are bearing the brunt of this fight for industrial justice for American workingmen are in need.

Two members of our executive council, John Mitchell and John B Lennon, have been among these strikers and presented to us unquestionable evidence of the conditions there. After consideration of the conditions, the need and importance of the issues involved, the executive council makes this appeal to all the members of organized labor for prompt and generous financial assistance to aid these needy and suffering fellow workers, their wives, and children.

We appeal in the name of all labor and common humanity that each local union at once make an appropriation from its funds of not less than 5 cents for each member

that each central labor union select a committee to appeal to all workers and friends to contribute promptly and as generously as possible, and to use every other honorable means by which funds may be secured. The men and women and children of Calumet, Mich., must not be starved into submission. They must and they will win, if the toilers of our country will but do their duty.

Remember that the splendid solidarity of the workers of America largely aided in securing the magnificent victory of the anthracite miners a few years ago. The newspapers have suppressed nearly all reference to the Calumet miners' strike. In this appeal we hope to reach the minds, hearts, and the consciences of our fellow workers and friends and thereby secure their ready response to the call for aid.

Send all contributions to Frank Morrison, secretary American Federation of Labor, Ouray Building, Washington, D. C., who will return receipt for the same and promptly forward every dollar to the immediate aid of the struggling miners of Calumet.

Fraternally, yours,

Executive council, American Federation of Labor: Samuel Gompers, president; Frank Morrison, secretary; James Duncan, first vice president; John Mitchell, second vice president; James O'Connell, third vice president; D. A. Hayes, fourth vice president; Wm. D. Huber, fifth vice president; Jos. F. Valentine, sixth vice president; John R. Alpine, seventh vice president; H. B. Perham, eighth vice president; John B. Lennon, treasurer.

About August 20 posters were printed and distributed in quantities to labor unions in adjoining States. They were intended to be displayed in conspicuous places to call attention to the strike and to warn workingmen not to come to the Michigan copper district. The form of the poster follows:

STRIKE.

Stay away from the copper mines of Michigan. Fifteen thousand miners are striking for higher wages, shorter hours, and better working conditions.

Don't be a scab.
Wages are low, the labor required excessive, hours long.
No real man will come to the copper district until a settlement is made.
Men hired for Michigan points are hired to scab.
Stay away.
By order of Western Federation of Miners.

On September 4 the Calumet & Hecla Mining Co. fitted up a powerful searchlight on a tall tower, and later the Quincy Mining Co. followed the example. The reason for installing these great searchlights was not apparent, as the strikers had shown no disposition to damage property.

THE MILITIA, DEPUTY SHERIFFS, AND IMPORTED GUARDS.

On the night of July 23–24, James A. Cruse, sheriff of Houghton County, telegraphed Gov. Woodbridge N. Ferris, asking that 2,000 of the State troops be sent to prevent further disorder. Following is part of the telegraphic correspondence:

HOUGHTON, MICH., *July 24—2 a. m.*

GOV. WOODBRIDGE N. FERRIS,
Alpena, Mich.:

General strike has been called to-day in all the mines in Houghton County, backed by the Western Federation of Miners. Armed rioters have begun to destroy property and have threatened the lives of men who want to work. I am unable to handle the situation, because the territory to be covered is 28 miles long. The strike is on in 20 mines, with 15,000 men idle.

I have taken every means in my power to control the outbreak, but I am convinced that the situation will become worse and will result in great destruction of property

and possible loss of life unless I receive the aid of State troops. I will require about 2,000 men to cover the territory, and as Sheriff of Houghton County I ask that you call out troops to that number and detail them for service here at once.

JAMES A. CRUSE,
Sheriff of Houghton County.

HARRISVILLE, MICH., *July 24, 1913—4.33 a. m.*

JAMES A. CRUSE, *Sheriff, Calumet, Mich.:*

Have ordered troops sent to copper country immediately.

W. N. FERRIS, *Governor.*

LANSING, MICH., *July 24, 1913—9 p. m.*

JAMES A. CRUSE,
Sheriff of Houghton County, Calumet, Mich.:

Gov. Ferris has ordered troops to go to your county at once. Some have started; others in the morning.

E. C. AUSTON, *Executive Clerk.*

LANSING, MICH., *July 24, 1913—11.30 p. m.*

JAMES A. CRUSE,
Sheriff Houghton County, Calumet, Mich.:

Wire to-morrow morning, Friday, exact conditions of affairs in detail. Is situation as grave as first anticipated?

WOODBRIDGE N. FERRIS, *Governor.*

BAY CITY, MICH., *July 25, 1913—12.30 a. m.*

JAMES A. CRUSE,
Sheriff Houghton County, Calumet, Mich.

What is the situation now? Do all in your power to avoid calling troops. Will send troops if absolutely necessary. Property and life must be protected. At Bay City until noon. Arrive Alpena 5 o'clock.

WOODBRIDGE N. FERRIS, *Governor.*

LANSING, MICH., *July 25, 1913—1.15 a. m.*

J. A. CRUSE,
Sheriff Houghton County, Mich., Calumet.

Adjoining counties need troops; the sheriffs of respective counties must appeal to governor direct. Present calling out of troops applies only to Houghton County.

WOODBRIDGE N. FERRIS, *Governor.*

Gov. Ferris ordered the whole National Guard of Michigan to the scene of the strike in Houghton County. The various companies began to entrain on the evening of July 24 and some arrived on the morning of July 25. By July 27 all had reached their destination. The armed force consisted of 2 batteries of artillery, 2 troops of cavalry, mounted signal corps, 1 company of engineers, and 3 regiments of infantry, each with 12 companies; also 2 ambulance companies and 3 brass bands. The entire force numbered 211 officers and 2,354 enlisted men, under the command of Brig. Gen. P. L. Abbey, of Kalamazoo.

The soldiers were distributed to the various mine locations in Houghton County and encamped in tents on land belonging to the mining companies. On their arrival the rioting ceased, and there was no further disorder until some of the mine workers started to return to work. At some mines the stoppage of the pumps caused

water to accumulate in the bottoms of the shafts. The strikers, however, made no effort to damage any of the property of the mining companies at the beginning of the strike or later. At the beginning of the strike it was directed by three members of the executive board of the Western Federation of Miners who were on the ground—Guy E. Miller, J. C. Lowney, and Yanco Terzich. Vice President C. E. Mahoney arrived on July 26. The next day a protest against the presence of the troops was adopted at a meeting of the strikers, and Mahoney left for Big Rapids where he presented it to Gov. Ferris. The governor was reported to have said in an interview on July 28:

> The mine operators had nothing to do with calling the militia. The order was issued after the authorities informed me they were powerless to control the situation. I believe the troops are necessary at present to protect lives and property. I will return to Lansing to-morrow, and at the present time I see no reason why I should go up to the upper peninsula.

Gov. Ferris never visited the copper country during the strike. His order for the National Guard to go to the district was in pursuance of the State military law, which provides that the governor—

> may order out any portion of the militia for the service of the State to suppress riots and to aid civil officers in the execution of the laws of this State or of the United States.[1]

Some companies of the National Guard were stationed in the lower end of Keweenaw County to guard the property of the two mines there, the Mohawk and the Ahmeek. All the rest were stationed at mines in Houghton County. On July 29 John Hepting, sheriff of Keweenaw County, asked Gen. Abbey, by telephone, to withdraw the troops from that county. He said that there were no disturbances in his county and that he had not requested that soldiers be sent to the county, but merely that they might be placed near the Houghton County line to be available if needed. Later on the same day, however, he signed a paper as follows:

> MOHAWK, MICH., *July 29, 1913.*
>
> Gen. P. L. ABBEY,
> *Commanding Michigan National Guard:*
>
> The conditions at Mohawk mine are such that I ask you to protect the people and property at Mohawk until the Mohawk Mining Co. is satisfied that order is restored.
>
> JOHN HEPTING,
> *Sheriff of Keweenaw County.*

Gen. Abbey secured written authority from J. A. Cruse, sheriff of Houghton County, to make arrests and to use such force as might be necessary to preserve order in that county. The authorization given by Sheriff Cruse was similar in form to another written authorization, which was signed by Sheriff Hepting on August 3, a copy of which follows:

> MICHIGAN NATIONAL GUARD,
> *Calumet, Mich., August 3, 1913.*
>
> Brig. Gen. P. L. ABBEY,
> *Commanding Michigan National Guard,*
> *Calumet, Mich.*
>
> SIR: The governor of the State of Michigan having at my request authorized the use of the National Guard within the confines of the County of Keweenaw for the purpose of aiding the civil authorities therein in the preservation of peace and the execution of the laws of this State, therefore I, as sheriff of said county, do authorize you as commanding officer of the military forces on such duty to station said forces

[1] Act 84 of Public Acts of 1909, as amended by act 67 and act 172 of Public Acts of 1911.

in any part or portion of my bailiwick as in your discretion seems best, and with the use of such troops to prevent any violation or violations of the laws of this State, to break up any unlawful assemblages, to prevent rioting or other unlawful acts being committed, to make arrests of persons engaged in any breach of the peace or in the commission of a felony, or aiding or abetting the same, and to use such force as may be necessary and justifiable in carrying out the authority herein given.

JOHN HEPTING,
Sheriff of Keweenaw County.

Before the strike began James A. Cruse, sheriff of Houghton County, had sworn in about 430 deputy sheriffs, at the request of the mining companies, nearly all of them employees of the companies. Some of these had been deputized months before the strike began. After the strike began he increased the number of deputies until November 1, when they numbered about 1,700. Many of this additional force were employees of the companies, but some were men who were not so engaged. In a telegram to Sheriff Cruse, Gov. Ferris warned him that he must observe the statute regarding the appointment of deputy sheriffs. A copy of the telegram follows:

LANSING, MICH., *August 7, 1913—10.15 a. m.*

JAMES A. CRUSE,
Sheriff Houghton County, Calumet, Mich.:

In appointing deputies observe section 2596, Compiled Laws 1897, which says "The people of the State of Michigan enact, that hereafter no sheriff in this State shall appoint any undersheriff or deputy sheriff, except the person to be so appointed shall have been a bona fide resident of the county in which the appointment is made for three months next preceding the time of appointment."

WOODBRIDGE N. FERRIS,
Governor of Michigan.

The deputy sheriffs appointed by the sheriff were given authority to carry arms, under section 3, act 274, Public Acts of 1911, which provides that the prosecuting attorney and the sheriff of a county shall have power to grant licenses for carrying arms. This section is as follows:

SEC. 3. The prosecuting attorney and sheriff, in counties in which no regularly organized police force exists, and in counties where one or more regularly organized police forces exist, the prosecuting attorney, sheriff, and chief of police of the city within which such license is sought shall constitute a board, whose duty it shall be and who shall have power to grant licenses to carry a revolver, pistol, or pocket billy, and the said board shall meet on the first Monday in each month at the county seat for the purpose of hearing applications to carry a revolver, pistol, or pocket billy. A majority of said board shall constitute a quorum.

The employees of the mining companies that were sworn in as deputy sheriffs were permitted to carry arms under section 4, act 274, Public Acts of 1911, which provides that upon payment of $10 by such a company any of its employees, the number not being restricted, may obtain a general license for them to bear arms. This section, which is called a "blanket license" act, follows:

SEC. 4. It shall be the duty of said board to issue licenses to go armed with a revolver, pistol, or pocket billy to all peace officers and such other persons who in the judgment of said board should be permitted to go so armed: *Provided*, That upon the payment to said board of the sum of ten dollars, mining companies, banks, trust companies, railroad and express companies may obtain a general license good for any of their employees actually engaged in guarding any property or the transportation of moneys or other valuables. Licenses issued to peace officers or to employees of railroad and express companies shall permit such persons to go armed anywhere within the State while in the discharge of their duties.

Following is a copy of a letter from the governor to the sheriff:

STATE OF MICHIGAN, EXECUTIVE CHAMBER,
Lansing, August 9, 1913.

MY DEAR SIR: Your letter of August 4 came to Big Rapids and was read to me over the phone, so that I received it while I was at the executive office. I also received your telegram with reference to appointing deputies. No doubt Gen. Abbey has told you that his plan is to withdraw the troops gradually, but solely with reference to the safety and welfare of the citizens of the strike region.

There is no occasion for my writing a long letter.

Very sincerely, yours,

WOODBRIDGE N. FERRIS, *Governor.*

JAMES A. CRUSE,
Sheriff Houghton County, Houghton, Mich.

The strike that began on July 23 had been talked of as a probability for six months, and for a month before that date it had been very confidently expected. Two weeks before that date James A. Waddell, president of the Waddell-Mahon Corporation, of New York, arrived in Houghton County for the purpose of making a contract with the county board of supervisors or with the mine managers to furnish guards. The board of supervisors is composed of 18 men, one selected by each of the townships in the county and one from each of the four wards of Hancock City. This board is completely dominated by the mine managers. A number of its members are mine managers, and nearly all of the others are connected directly or indirectly in business relations with the mining companies.

James McNaughton, general manager of the Calumet & Hecla Mining Co., the largest mining company, is one of the 18 supervisors, and he is credited with being the controlling spirit in the board of supervisors, and also among the mine managers. At first he was opposed to employing men as guards from Waddell, because he felt that the strike would last but a short time and that the men who wished to continue at work and the property of the mining companies could be protected by the local deputies, who were mostly employees of the companies. After the riots of the first two days of the strike, however, the board of supervisors decided that the force of local deputy sheriffs was inadequate to preserve order, and the board authorized Sheriff James A. Cruse to employ Waddell men. Men in Waddell's employ left New York on July 25, reached Houghton County two days later, and were distributed to various mine locations in the county. The number of Waddell men employed by the county was 52. The Waddell men were appointed under section 2590 of the Compiled Laws of 1897, which is as follows:

(2590) SEC. 81. Any sheriff, deputy sheriff, coroner, or constable may require suitable aid in the service of process in civil or criminal cases, in preserving the peace, or in apprehending or securing any person for felony or breach of the peace, when such officer may have power to perform such duty; and when any such officer shall find resistance made against the execution of any process, or shall have good reason to believe that such resistance will be made, he may take the power of the county, and proceed therewith in proper person to execute such process.

Following is a copy of a letter from the sheriff to the governor:

HOUGHTON, MICH., *August 10, 1913.*

Hon. WOODBRIDGE N. FERRIS, *Governor,*
Lansing, Mich.

SIR: As sheriff of the county of Houghton, I wish to lay before you to the best of my knowledge the present situation with regard to the pending strike called by the

Western Federation of Miners and involving a portion of the employees of the various mining companies of this county.

At the beginning of the strike, which occurred simultaneously at the several mines and covered a district about 28 miles long, I found myself without sufficient force to cope with or effectively resist the disorder and violence which accompanied it. My deputies were attacked. The authority of my office was ignored. It was not until the arrival of the Michigan National Guard that order was restored, and I believe that it is the presence of an adequate force alone which results in its continuance at the present time. I believe upon information coming from various sources to my office that without an adequate force for the maintenance of the public peace violence to person and property will at once ensue; that the people inclined to violence are lying low for that chance. It is also my belief, based on similar information, that if the public peace is maintained and lawlessness and disorder effectively restrained for a while longer the strike will soon end by the voluntary returning to work on the part of the employees, a large part of whom have already expressed their wish to go to work. With the return of confidence the number expressing this feeling is increasing daily, and I am informed that there is a growing sentiment among the strikers themselves to the same effect. Anything to destroy the confidence of the community in the preservation of order and the protection of life and property will, in my judgment, seriously prolong the present situation.

The above is the situation as it is viewed by myself from all the information available to me and from my personal observation. I now desire to state to you fully and frankly just the position I am in with reference to maintaining order and protecting life and property through the authority and forces at my command as sheriff of this county.

This has been a peaceable community and there has never been any organized force available for official action. The force directly attached to my office has consisted of the few deputies necessary for the ordinary serving of process. I have at present, under recent appointment throughout the county, about 600 deputies, but they are, as to nearly the whole number, local men at the several mining properties, employees of the mining companies, who have been deputized to give them the authority of officers, but who act merely as watchmen and caretakers of the property. If any disorder should occur, I could not depend on any sufficient number to respond to a call from my office for the suppression of violence or riot.

I have found it impossible so far to obtain men in whose efficiency I could have confidence who could be organized into a regular force; and while it is my strongest wish to be able through my office to control any disorder or attempts at disorder that may arise, I feel that the gravity of the situation and the extent of territory to be covered make it impossible for me to meet the situation with any force upon which I could depend.

I have employed, through the Waddell Agency, 52 men from outside the State. These men are not deputized, and under the law I can not confer upon them the authority of deputy sheriffs; but I am using them as aids and for the purpose of organizing and instructing deputy sheriffs, and as watchmen in the guarding of property. This I felt justified in doing because of the impossibility of finding men for the purpose locally.

Should it happen that I must handle the situation alone while the possibility of violence and destruction of property continues, I can see no way of meeting the situation except to employ, on behalf of the county, a body of men from outside to act as my aids in the suppression of riot, if necessary, and in the protection of life and property. I should be very unwilling to do anything of this kind, and it would be only as a last resort in carrying out my sworn duty in the maintenance of the public peace. Of course, with the aid of the Michigan National Guard, no such step will be necessary.

I feel that a reduction in the number of the troops which I am told is about to take place, is reasonable, but I also feel that the removal of the entire force is not now justified and would be followed by a situation of great danger to this community.

I have been and am doing my best to find among residents of the county reliable men whom I can appoint as deputies. I hope to have a number who can guard endangered property as the number of the troops is reduced, but to obtain a sufficient organized force for the suppression of riot, or the enforcement of law and order in the existing situation, is beyond my power. An insufficient or an unorganized or undisciplined force of deputies would, in my judgment, be not only useless but would be a menace.

My sole and only wish is to do my sworn duty in the preservation of the public peace, the enforcement of law, and the protection of life and property. I have tried to make clear to you that with my best efforts I do not feel that I can control the situa-

tion with reference to the peace and order of the county with any local force which I may be able to get together. I do not feel that I can maintain order, or give proper legal protection to life and property without the assistance for a time of the Michigan National Guard. If I should have to maintain order without that assistance while present conditions continue I should fear an immediate renewal of violence, which would force upon me the employment of outside armed assistance. For the good name of the State this should be avoided. The community has thus far depended solely upon the public authorities of the State and county for protection of property and the restraining of intimidation and violence. Their growing confidence in that protection should be preserved.

Yours, respectfully,

JAMES A. CRUSE,
Sheriff of Houghton County.

Following is a summary of an interview with James MacNaughton, published in the Detroit Free Press, which appeared in the Hancock Evening Copper Journal of August 11:

According to an interview published in the Detroit Free Press, James MacNaughton, general manager of the Calumet & Hecla, declared he would just as soon have "Lefty Louie" or "Gyp the Blood" in his employ as a peace officer as James Waddell, the strike breaker imported from New York.

He furthermore declared that the Calumet & Hecla had not been concerned in the engagement of Waddell; that none of its officers knew Waddell was engaged until after he had arrived; that Waddell had obtained an audience with him under false pretences and that Waddell had been shown the door the moment his identity was revealed.

Furthermore, MacNaughton stated that not one cent of Calumet & Hecla money would go to Waddell and that none of Waddell's men would be permitted to act as guards on Calumet & Hecla property.

Mr. MacNaughton, in making the statement, declared that he did not hold one of the company's striking employees responsible for the strike.

"We have Croatians, Austrians, Hungarians, Italians from northern Italy, Poles, and other nationalities working for us, and they are industrious, loyal men; but they do not know our language or our customs, our laws, nor our ideals. They have been influenced by Western Federation of Miners' organizers and hired men who have been here in some cases for years. Constant dropping will wear a stone.

"We challenge inspection of pay rolls, housing conditions, and our treatment of men in every particular. But our men, told day after day that they were being mistreated, underpaid, or otherwise oppressed, finally were persuaded. We hold nothing against them, understand just exactly how they were induced to strike. They are coming back, because they are learning what the union is not doing for them.

"We will not even evict a single tenant, striker or otherwise, for nonpayment of rent. The men now idle are not paying their $1 per family per month for medical, surgical, and hospital attendance, which is continued for all miners and their families, irrespective of their union affiliations, whether strikers or not. We do this because we know that our men have been misled."

When the Waddell men had first been brought into the district the sheriff and prosecuting attorney of Houghton County had issued authority for them to carry arms under section 3, act 274, Public Acts of 1911, which is quoted on a previous page. After the shooting at Painesdale on August 15, in which one striker was killed and four wounded, one of them fatally, by four Waddell men and two deputy sheriffs, Prosecuting Attorney Anthony Lucas served notice on Sheriff James A. Cruse that he withdraw his consent for any of the Waddell men to carry weapons, but as the board for authorizing the carrying of weapons is composed of only two, and as Sheriff Cruse did not withdraw his consent, the Waddell men continued to carry arms while they remained in the county.

The seven members of the executive board of District Union No. 16 of the Western Federation of Miners petitioned the State circuit court for an injunction to restrain James A. Cruse, sheriff of Houghton County, from continuing Waddell-Mahon men in his employ in the

service of process in civil or criminal cases, in preserving the peace, or in apprehending or securing any person for felony or breach of the peace. The petition stated that at all times the sheriff could have secured the services of suitable men who were residents of the county to serve as deputies, as required by law; that Waddell-Mahon men had deliberately and intentionally sought to pick quarrels with peaceful and law-abiding citizens; and that these men had been brought into Houghton County not for the purpose of preserving peace and protecting the lives and property of citizens, but to harass the strikers and to break up the strike. The petition further declared that not a single shot had been fired by a striker since the strike began; that two of the strikers had been shot in their legs; and that the Waddell-Mahon men had shot into a house at Painesdale in which there were 15 persons, resulting in the death of two and the wounding of two others. The statements in the petition were supported by affidavits signed by a number of the strikers. E. F. Le Gendre, an attorney, filed an affidavit that James A. Waddell was virtually in charge of the sheriff's office; that he made that office his headquarters; and that he dictated everything the sheriff did with regard to making arrests of strikers and serving processes on them. An affidavit was filed from a justice of the peace which showed that a warrant which was returned by a Waddell-Mahon man had to be served a second time by a duly authorized deputy sheriff. The petition in part follows:

SEC. 7. That in addition to this force (militia), which was under the control of the sheriff and with which, without doubt, it was in the power and ability of the said sheriff to serve the process issued by the courts of the county, to maintain peace and preserve order therein, and to protect [prevent] the destruction of property therein, and to enforce protection to the citizens of the county, your orator alleges that, in violation of the law, the said sheriff brought into the county of Houghton numerous so-called strong-arm men who were in the employ of the so-called Waddell-Mahon corporation in large numbers, as your orator is informed and believes, and therefore charges the truth to be in excess of 200; that your orator can not say definitely how many there are of such men in said county, but alleges that on, to-wit: Tuesday, the 12th day of August, A. D. 1913, the board of supervisors of the county of Houghton allowed to the Waddell-Mahon corporation the sum of $6,621, which your orator is informed and believes represents and paid for the transportation of said Waddell-Mahon men from the city of New York to Houghton County, with their salaries or compensation for the eight days immediately preceding the 1st day of August, A. D. 1913, and that in addition thereto the sum of $803 was allowed by said board of supervisors for the board and lodging of said Waddell-Mahon men.

SEC. 8. Your orator alleges, upon information and belief, and charges the truth to be, that a number if not all of the men of the so-called Waddell-Mahon men employed by said sheriff were made and are now acting as deputy sheriffs of Houghton County under appointment by said Sheriff James A. Cruse in violation of the statute in such case made and provided.

SEC. 9. That the employees of said Waddell-Mahon corporation have been used by said sheriff for the service of process and in the transportation of prisoners to and from the jail and in acting as court officers and in making arrests and in transporting prisoners from the place of arrest to the county jail; that said Waddell-Mahon men are tall, large, and muscular men of the prize fighter variety; that since they have been in the said county of Houghton said Waddell-Mahon men have deliberately tried to incite the citizens of said Houghton County to riot and disturbance; they have deliberately and intentionally tried to break up and molest the peaceful parades of the striking employees of the said county of Houghton while walking along the public highways of said county; that these Waddell-Mahon men have been in practical control of the sheriff's office of said county of Houghton and directing the execution and enforcement of the laws in said county of Houghton; that in transporting men arrested in said county of Houghton to the county jail the said Waddell-Mahon men have beaten their prisoners while in automobiles; and that while in the county jail of said county of Houghton prisoners arrested in connection with said strike have been unmercifully and cruelly beaten by the said Waddell-Mahon men, all while

the said prisoners were not obstructing or resisting arrest and while they were behaving as prisoners; that under the direction of, if not by the direct authority of, the said sheriff the said Waddell-Mahon men have made numerous arrests in said county of Houghton of men on strike without any cause therefor, and without any evidence of any offense having been committed by said prisoners; that on many examinations conducted after the arrest of said prisoners it was found that not a scintilla of evidence was produced or was in the possession of the said sheriff of said Houghton County or said Waddell-Mahon men in any way connecting said prisoners with the violation of any law or the commission of any offense; that many of said strikers have been arrested for the alleged commission of misdemeanors not in the presence of the said sheriff or any of his duly authorized deputies, without warrant, contrary to the laws of the State of Michigan.

A. A. Kerr, attorney for the Western Federation of Miners, quoted section 2590 of the Compiled Laws of 1897, providing that—

Any sheriff, deputy sheriff, coroner, or constable may require suitable aid in the service of process in civil or criminal cases, in preserving the peace, etc.

He claimed that the Waddell-Mahon men were virtually acting as deputy sheriffs, and that this was a violation of section 2596 of the Compiled Laws of 1897, which provides that no person shall be appointed deputy sheriff—

except the person to be so appointed shall have been a bona fide resident of the county in which the appointment is made for three months next preceding the time of appointment.

Attorney Kerr claimed that the sheriff had gone beyond his authority in calling to his aid persons whom the legislature never intended should be employed as peace officers. He further claimed that the records of the Waddell-Mahon men showed that they were not "suitable aid" for the sheriff.

Charles S. Watson, counsel for the sheriff and the Waddell-Mahon Corporation, claimed that there were allegations in the petition which were not supported by affidavits. He also argued that the use of the word "suitable" in the statute referred not to the moral caliber of the men but to their number. He insisted that the sheriff had a perfect right to appoint persons as aids who came from other States.

This petition for an injunction was decided by Judge P. H. O'Brien on August 23. He decided that under the law persons from outside the State could not be appointed deputy sheriffs, but that such persons could be appointed as "aids." His decision in part follows:

I have come to the conclusion (it may be a little premature) I have no power to grant this injunction. I would have had the authority to prevent the appointment of these men as deputy sheriffs, but it appears they are merely training deputy sheriffs.

The court has no right to pass on the suitability of the officers, but I am inclined to believe that when a deputy goes beyond his power of duties the court can restrain him. I have no doubt that if men in the guise of police officers are stirring up riot and trouble, and that it is probable that these conditions will continue, the court has a right to enjoin them, even if they were legally appointed. The sheriff under present conditions has broad power, but men appointed by him should be the ones to keep the peace, and not to stir up trouble.

I shall expect the sheriff to keep his deputies and others in his employ within the bounds of their duties. They must not break up peaceful parades. The sheriff must assist neither the mining companies nor the strikers. This is a time for discretion, both on the part of the sheriff and the parties involved in the dispute. I understand the difficulties the sheriff has labored under, and I have confidence in his good faith. But no one in his office can be employed to break a strike. As long as we have no arbitration court in which to settle labor disputes, all the officers of the law can do is to preserve life and property. I regard it as a disgrace to civilization that no forum has been created for the settlement of these disputes, but as long as no such forum exists we, as officers of the law, must keep our hands off. I don't see, without

passing on this bill, how I can interfere with the sheriff. The law provides a remedy when the sheriff exceeds his duty, and in this court it will be a real substantial remedy. It ought to be the effort of both parties to this controversy to get together. We ought to have more Christianity.

There is absolutely no precedent in the courts of this or any other county for such action as is being brought here. As far as I know no such suit has been brought before. If after more careful study I find the order should be issued, it will be issued. I may hand down a final ruling and opinion within the coming week.

The intimation by Judge O'Brien that if evidence were brought to him that the Waddell-Mahon men thereafter stirred up strife and trouble he would enjoin them, even though they had been legally appointed as aids, served as a restraint on these men, and they did not serve processes, and for some time were more careful not to incite persons to violence.

The Waddell men remained in the district for months, and the county paid to Waddell $5 a day for each of them, and also paid their traveling expenses and their hotel bills at places in the county where they were stationed. Receiving $5 a day each for the men, Waddell paid them $3 a day, making $2 a day on each man.

Two of the mining companies employed men from Waddell and themselves paid for these men. In September Waddell was furnishing to the county 52 men, and he furnished to the Copper Range Consolidated Co. 32 men and to the Quincy Mining Co. 28 men—a total of 112 in the district. The Calumet & Hecla Mining Co. also employed some Pinkerton men especially as a bodyguard for its general manager and other officers.

The strikers were much more incensed at the bringing of Waddell men to the district than they were at the governor for sending soldiers to the district. They called the Waddell men "gunmen" and denounced them as "thugs." They made a vain appeal to the governor to have the Waddell men withdrawn on the ground that these men were desperate characters, and that to bring men from a distant State to act as "aids" to the sheriff was a violation of the law which provides that deputy sheriffs should not be appointed unless they had been bona fide residents of the county for three months. The strikers were much more enraged by the employment of these Waddell men than by any other circumstance that occurred during the whole strike.

At a meeting of the board of supervisors of Houghton County on August 12, bills were approved which aggregated $9,507, and which amount was incurred in preserving order during the strike from the time it began on July 23, to the end of that month. Of this amount the Waddell-Mahon Corporation of New York received $7,606.38 in settlement of the salaries of men furnished by that corporation and in payment of their traveling expenses and hotel bills; $630.50 had been paid for deputy sheriffs and $1,270.12 spent for automobile hire. The supervisors at this meeting adopted resolutions which highly commended Sheriff James A. Cruse for his action in bringing to the county men from New York to protect life and property during the strike. Only one of the supervisors opposed the adoption of these resolutions. The sheriff was authorized to proceed as before and to secure and arm such additional deputies as he might consider necessary for the purpose of preserving order.

At a meeting of the board of supervisors on September 9, bills for August were allowed and ordered paid. These included $10,344.83

for services by Waddell-Mahon men; $4,208.75 for wages of special deputy sheriffs; $1,504.23 for board of deputies; $27.63 for transportation of deputies; $1,656 for automobile hire for the sheriff and deputies; and $1,304.33 for revolvers and ammunition, a total of $19,045.77. The following item is copied from the published proceedings of the board:

The following amendment was offered by Supervisor Rourke: Moved that all bills be allowed and ordered paid with the exception of the bills of the Waddell-Mahon Corporation and all bills accruing from their employees in Houghton County. There being no support to the said amendment, the motion was declared of no avail.

The following was published in the local columns of the Houghton and Calumet Daily Mining Gazette for September 29:

Sheriff Cruse, who returned Friday noon from a conference with Gov. Ferris at Lansing and thereafter was so busy he could not be seen, said yesterday that the conference was an informal affair and resulted in no official action of any sort.

The governor asked for the conference because he thought Sheriff Cruse could tell him best how the chances are for getting the remaining troops out of the county. That the chances are not good is evident from the fact that the mounted patrols, the only guardsmen remaining are prepared for an indefinite stay.

The sheriff says he enjoyed the conference greatly, that he returns with a high opinion of the governor's judgment and of the governor personally.

Some of the lower State papers said that the conference resulted in the governor's requesting the removal of the Waddell-Mahon men. The sheriff denies this.

The sheriff says that there is much feeling in lower Michigan over the cost of bringing the troops to the copper country, though that some people who look into the situation calmly consider it was a good investment as it cost little more than twice as much as one State encampment and gave the men as much experience as half a dozen such mobilizations.

The board of supervisors of Keweenaw County did not authorize the employment of Waddell men. On September 1, Sheriff Hepting told Maj. A. H. Gansser, commanding a regiment of militia at the Mohawk and Ahmeek mines, that he would not appoint Waddell men even if he should be ordered by the supervisors to do so. No Waddell men were employed in Ontonagon County.

A circular, issued by the Waddell-Mahon Corporation, "an organization that specializes in labor disputes," and sent to corporations throughout the country that have large numbers of employees, says:

As an evidence of our ability as strike breakers, we invite your attention to the labor difficulties now ensuing along the copper range of the Upper Peninsula of Michigan between the Calumet & Hecla Copper Co., the Commonwealth Copper Co., the Quincy Copper Co., et al., and the Western Federation of Miners. In amount of capital and number of men involved this strike is the most important of the present year. We point with pardonable pride to the fact that this corporation has been selected by Sheriff James A. Cruse, of Houghton County—the storm center of the strike—to aid him in maintaining the integrity of the law. We are now engaged in "policing" the 1,019 square miles of territory contained in Houghton County. We are safeguarding the property of the mine owners against intrusion and violence. We are also protecting the lives and the homes of the 80,098 men, women, and children of Houghton County against overt acts. The Western Federation of Miners is doomed to inevitable disaster and defeat in the Upper Peninsula of Michigan. We make this prediction at this time, and if you will follow the story of the strike as it appears in the daily newspapers, and particularly in the Boston News Bureau, the well-known financial organ, which has a special correspondent on the ground, you will see that our prediction will be fulfilled daily. We are sure of defeating the Western Federation of Miners in this operation because we have met and defeated them before. Last year, when the agitators of this union sought to paralyze the copper industry of Nevada and Utah, we were retained by the Utah Copper Co. and the Nevada Consolidated Copper Co., and broke the great strikes at Bingham Canyon, Utah, and at Ely and McGill, Nev. We ask you to watch the progress of the present strike, because we know it will be a triumph for law and order, a triumph for the mine owners; and will

furnish still another evidence of the success we have always met with in breaking strikes. We ask you to judge us by results.

On September 29, guards employed through the Ascher Detective Agency of New York began to arrive in the district. About 30 arrived on that day, 30 on September 30, and 60 on October 1. They were distributed to the mines of companies subsidiary to the Calumet & Hecla Mining Co. in the upper part of Houghton County.

INJUNCTIONS AGAINST PICKETING.

On September 20 Judge P. H. O'Brien, of the State circuit court, issued an injunction restraining the Western Federation of Miners, their officers, many of their members who were named, and "each and every person affiliated with the said Western Federation of Miners as a member thereof," from committing various acts complained of in the bill of complaint filed by the mining companies. The injunction said the bill stated, among other things, that the defendants "are combining and confederating with others to injure said complainants touching the matters set forth in said bill," and that their "actions and doings in the premises are contrary to law, equity, and good conscience." The injunction commanded the defendants, "their aiders, abettors, agents, counsellors, and all others" acting with them to desist and refrain—

From in any manner interfering with, molesting, or disturbing any person or persons now in the employ of said complainants above mentioned or any of them, and from in any manner interfering with, molesting, or disturbing any person or persons who may desire to enter the employment of the said complainants, or any of them, by way of threats, personal violence, intimidation, or by any means whatsoever, calculated or intended to prevent, against their will, such persons or any of them from entering or continuing in the employment of said complainants or any of them, or calculated or intended to induce, against their will, any employees of said complainants, or any of them, to leave the employment of said complainants, or any of them, or to desist or refrain from working for said complainants, or any of them, either temporarily or permanently.

From "picketing" in or about or in the vicinity of the mines, works, properties, or premises or any thereof of the said complainants or any of them, or on or near the highways or ways used by the employees of said complainants or any of them, in passing to or from their work, or at or near or in the locality of the homes or residences of the said employees or any of them.

From in any manner interfering with the free access of the employees of said complainants or any of them from their homes to the premises of said complainants or any of them, and the free return of said employees to their homes.

From gathering and parading in large numbers or in any numbers at or in the vicinity of the premises of said complainants or any of them, or on the highways or other ways along and over which the employees of said complainants or any of them pass to or from their work or about or in the vicinity of the localities of the homes or residences of the said employees or any of them, during the morning or evening hours when the employees of said complainants or any of them, are going to or returning from their work.

From impeding, obstructing, molesting, or disturbing the employees of the said complainants or any of them by threats, violence, insults, gatherings, parades, or any form of intimidation whatsoever, or by any acts of any kind calculated or intended as or for intimidation of the said employees or any of them.

From doing any other act or thing whatsoever in furtherance of any combination or conspiracy to cause the employees of complainants or any of them, or any other person, against their will, to desist or refrain from working in the employment of the said complainants or any of them.

All of which we strictly command you to observe until the further order of this court in the premises.

Judge O'Brien was severely criticised in the Miners' Bulletin and by members of the Western Federation of Miners for issuing this

injunction. The order that was most criticised was that forbidding picketing even when no force was used, and this order, it was claimed, was contrary to judicial decisions elsewhere which permitted peaceful picketing during strikes. The injunction, however, was obeyed by the strikers, and they discontinued picketing parades until September 29, when on application of the defendants Judge O'Brien dissolved the injunction. Thereafter there were early morning picketing parades in various locations throughout the district.

On October 8, on application of the mining companies, the State supreme court reinstated and continued in force the injunction which Judge O'Brien had issued on September 20 and had dissolved on September 29. The supreme court order modified Judge O'Brien's injunction to the extent that peaceful meetings and parading were not prohibited. On the same date the supreme court issued an order to Judge O'Brien to attend a hearing on November 4 to show cause why a mandamus overruling his writ dissolving the injunction should not be issued against him. This order of the supreme court was secured by Allen F. Rees, attorney for the Calumet & Hecla and subsidiary companies, and acting attorney for the other companies.

On October 23 Judge P. H. O'Brien issued an order to the deputy sheriff, undersheriff, and all deputy sheriffs of Houghton County. The order said that it had been made to appear to the court that the order of the supreme court, dated October 8, had been "openly disregarded and ignored" by the defendants, the Western Federation of Miners or members thereof; that except in a few instances the names of the persons who had violated the order could not be identified or their names learned, and that it had been made to appear to the court that further violations of the supreme court's order might be committed by persons unknown and unidentified. Judge O'Brien continued:

> Therefore, you, the said sheriff of the said county of Houghton, the undersheriff of said county, and all deputy sheriffs of the said county of Houghton, are hereby directed and commanded that, with such power and assistance as may be necessary to use, you, and each of you, do enforce the said writ of injunction and order of the court in the premises, by preventing violations of the said writ of injunction and of each and every provision thereof, and further that you, the said sheriff, undersheriff, and deputies, and all such assistants as may be deemed necessary by you, to that end, do attach the bodies of the defendants, members of the said Western Federation of Miners, or others enjoined and restrained by the said writ of injunction according to the terms and provisions thereof, who may be found by you, or any of you, and in the view of you, or any of you, in acts of violation of the said writ of injunction, and forthwith, or as soon thereafter as may be, to bring the persons whose bodies are so attached, before the said court to answer for such misconduct.
>
> And you are further directed and commanded that in the event that such persons whose bodies may be attached by virtue of this order, cannot, for any reason, be brought forthwith before said court, that each of such persons whose bodies may be so attached, be let to bail by the said sheriff in the sum of $200, conditioned for his appearance before the said court upon the first day upon which said court shall thereafter be in session.

Under a blanket writ issued by Judge O'Brien at midnight October 23 the militia and deputy sheriffs arrested 141 men at Allouez mine and 68 at the Mohawk mine, on the charge of violating the order of the supreme court. The men were brought on street cars to Houghton and a hearing was set for the afternoon of the day of their arrest, October 24. A. A. Kerr, attorney for the Western Federation of Miners, objected to the proceedings, and moved that the men

be dismissed. He called the proceedings an attempt to imprison men before proof of guilt. The names of many of the defendants being unknown to the officers the court stated that they should answer to their names at the call of the sheriff. Judge O'Brien announced that he would permit them to go on their own recognizance, but that he did not believe bail was necessary and that he did not intend to punish any man in advance of a hearing. He also directed that in future violations of the injunction the sheriff could arrest the violators and then release them on their own recognizance to appear in court at a stated time. He further said:

I think the court has the power to enforce its decrees by the method adopted in this case. There may be no authorities precedent, but it does not follow that the power does not exist in the court. Under the showing it seemed to me that if the injunction was to be enforced at all some process similar to this must be adopted. This is a supreme court injunction and this court must enforce it, laying aside whatever the private opinion of this court may be. There is no doubt that the injunction will be enforced. It is the duty of every citizen and inhabitant to obey it not merely in letter but in spirit. Law and order must be maintained or the Republic can not last. The men on strike are most interested in showing they are law-abiding citizens and willing to do their duty as citizens and the inhabitants of this county.

Addressing the men arrested at Allouez, Judge O'Brien said:

This court does not want to interfere with your liberty, but order and liberty should go hand in hand. The working class should respect this injunction. Do not interfere with men going to work. They have that right and the court will protect them in it. Respect the writ. I ask you to bear this in mind and tell the other strikers. Law and order come before even the solution of this industrial problem.

The 141 men who had been arrested at Allouez were then dismissed and there was a hearing of the men arrested at Mohawk. In addressing these men, the judge repeated in substance what he had told the men arrested at Allouez, and said, "You are permitted to parade, but you must not interfere with men going to work." He warned them, saying: "The supreme court says you have no right to picket. Whether this order is right or wrong, obey it. You have no right to call men scabs"; and further said, "You should recognize the absolute futility of attempting to evade the injunction."

On November 9 the militia arrested 99 strikers and women in Calumet, on the charge of violating the injunction.

STRIKE BREAKERS BROUGHT IN.

In September mining was done by the three largest companies, the Calumet & Hecla Mining Co., the Copper Range Consolidated Co., and the Quincy Mining Co. At all of the other mines work was still entirely suspended. At the Quincy mines the number that returned to work was comparatively small. At the Copper Range mines there was a larger number, and at the Calumet & Hecla mines a much larger number. By the end of September the production of the Calumet & Hecla mines was stated by company officials to be 40 per cent of the normal output, but officials of the Western Federation of Miners alleged that this statement was much exaggerated.

The first strike breakers brought into the district were brought by the Quincy Mining Co., and arrived at Hancock on the morning of September 19. These men were engaged by the Austro-American Labor Agency, 89 First Street, New York. They were Germans, and few of them could read English. The "statement of labor contract"

furnished to each showed that they were engaged to work underground in copper mines for the Quincy Mining Co., at $2.50 per day, 9 hours a day, and each was to pay the company, out of his earnings during the first six months, the cost of his transportation from New York, $24.50. Following is a copy of the "contract":

[Telephone, Orchard 3685. Frank & Nemerofsky, Props. Austro-American Labor Agency. 89 First Street, near First Street "L" Station, New York.]

STATEMENT OF LABOR CONTRACT IN ACCORDANCE WITH CHAPTER 709 OF THE LAWS OF 1910.

Name of employer	Quincy Mining Co.[1]
Address of employer	32 Broadway, N. Y.[1]
Name of employee	Mike Thomas.[2]
Address of employee	152 Ridge.[2]
Nature of work to be performed	Untorirdiech in der Kupfer Mine.[1]
Hours of labor	9.[1]
Wages offered	$2.50 per tag.[1]
Destination of persons employed	Hancock, Mich.[1]
Terms of transportation	$24.50 abezorgen, nach 6 monathe returniert.[1]
Remarks	Strike,[1] 50 cents per month for doctor.[2]

If more than one person is engaged, a list of names and addresses will be found attached.

New York, 9/16 [1] 1913 [1]

English, German, Hungarian, Slovak, Italian, Swedish, Polish.

Rest of contract printed.

Identical contracts were seen by an agent of the Bureau of Labor Statistics. None of them were signed, but all of them bore the following names and addresses written in pencil and apparently in the same handwriting:

Mike Thomas, 152 Ridge.
Emil Rein, 323 Wash.
Horace Joseph, 343 23d St.
Joseph Kuerfers, 323 Wash.
Franz Isigkeit, 323 Wash.
Franz Mock, Essex St.
Karl Kamp, 323 Wash.
Karl Niermann, 323 Wash.
Adolf Rosenfeld, 3 St.
Lorenz Mascher, 323 Wash.
Karl Werner, 323 Wash.
Paul Schmidt, 323 Wash.

The items on the "contract" were printed in seven different languages, but the blanks were filled out in German, most of them by typewriting, but the word "strike" was written in English, probably to comply with the law in New York, but evidently intended to deceive the Germans who could not read English.

Thirty-seven men started from New York, but six of them left the train on the way to Hancock. The 31 who arrived at Hancock reached there in a car over a spur track to the Quincy mines at 2 a. m., September 19. According to an admission of Charles L. Lawton, general manager of the Quincy Mining Co., made to an agent of the Bureau of Labor Statistics, they were kept confined in the railroad coach several hours. Then they were escorted to a shaft house by soldiers and Waddell men. Gen. P. L. Abbey and other officers of the National Guard were present. There were present also a large body of strikers near enough to be seen by the newcomers.

On the same day, before any of the men from New York went to work, 14 of them broke away from the mine and went to some of the strikers and told them that they had not known that they were coming

[1] Typewritten. [2] Written in pencil.

to a place where there was a strike, and did not know it until they arrived and saw the soldiers and in the background the strikers. The 14 men went to the headquarters of the federation in Hancock, where they made the same statements, and 12 of them put the statement in the form of an affidavit, a copy of which follows:

STATE OF MICHIGAN, *County of Houghton, ss:*

We, the undersigned, depose and say that we have been hired by the Austro-American Agency, New York City, to work in the mines of the Quincy Mining Co., at Hancock, Mich., with the understanding that there is no strike on in the district. On September 19, 1913, at our arrival to Hancock, we were locked into a coach from 2 o'clock a. m. until quarter after 4 o'clock, and then we were taken to the Quincy mine location. On September 19, 1913, we seen by the thousands of strikers parading on the county road. Then we found out that we were hired under misrepresentation by the agency who shipped us here. And furthermore say that we were not held by the Western Federation of Miners at their headquarters at Kansankoti Hall, Hancock, Mich., against our will or any other way, and that we are not willing to work in the Quincy mine while the strike is on, and therefore we came to the Kansankoti Hall to get protection against the Quincy Mining Co., as we were in the belief that we would be forced to work in the mines under conditions against our will.

Deponents further saith not.

ADOLF ROSENFELD.
KARL KAMP.
MIKE THOMAS.
EMIL REIN.
BRIMO JACOBS.
KARL WERNER.
JOSEF CURVERZ.
FRANK MOCK.
KARL NIERMANN.
PAUL SCHMIDT.
FRANK ISIVKEIT.
LORENZ MASCHER.

Witnesses.
JOHN KIISKILA.
WILLIAM KANGAS.
ANDREW PYHTILA.

Subscribed and sworn to before me this 20th day of September, A. D. 1913.

JOHN KIISKILA,
Notary Public, Houghton County, Mich.

My commission expires November 17, 1916.

Several armed Waddell men came to the federation hall to find the men who had left the mine. The Waddell men raised quite a disturbance and arrested one man, but they did not find the men they wanted, as these men, apprehending trouble, had left the village.

During the latter part of September strike breakers were engaged through the Austro-American Labor Agency, 28 South Canal Street, Chicago, and the Chicago Commissary Co. and Employment Agency, 612 West Madison Street, Chicago. On September 29 an affidavit was made by 24 men employed through the Austro-American Labor Agency for the Quincy Mining Co. They swore that the agent of the agency informed them that there was no trouble or strike at the place where they were to work, that on arrival at the Quincy mine they were guarded by deputies and soldiers and not permitted to leave the bunk house and boarding house at the mine, and that they were otherwise mistreated. The affidavit follows:

STATE OF MICHIGAN, *County of Houghton, ss:*

We, the undersigned, being duly sworn, depose and say that we reside in the city of Chicago, State of Illinois; that we went into the Austrian-American Employment Agency and the agent asked us if we ever worked in the copper mines. We told him that some of us worked in the coal mines of Pennsylvania. We asked him whether there was any trouble or strike in the district where he was going to ship us, and he answered us that there was no trouble or strike in the district, and told us to come into his office at 4 o'clock in the afternoon. At 4 p. m. he told us that he had a good

railroad job for us that would pay $2.10 to $2.50 a day, and the board would cost us $4 a week, and the company would pay us every two weeks. Then he handed us a slip of paper and said: "If you don't like to work in the mines, you can work on surface or on railroad."

On the 25th day of September, 1913, we left Chicago, Ill., and arrived on the following Friday, and were met by eight soldiers, who came into the car at Quincy Mills, to our best information. We asked the agent who accompanied us what the soldiers came to meet us for, and he said, "Don't be afraid." When we arrived at the boarding house we were presented a piece of paper for our signatures, and we inquired of the employment agent why we were to sign our names on the paper, and we were informed that we were to sign the pledge not to join or belong to any labor union or unions.

On Friday, the day of our arrival, we did not go down into the mine to work, but we were taken underground on Saturday following, and we worked underground shoveling rock and dirt and pushing big heavy cars; we were frequently told to get busy and get more on the cars; that the other miners had filled 16 cars per day.

We were told to work again, but we refused to do so, because we had found out that there was a strike, and we did not come to break the strike.

We further depose and say that our breakfast consisted of two boiled eggs, two slices of bread, and a cup of water supposed to be coffee; and our dinner consisted of two cheese sandwiches, a couple of soda crackers, and a cup of colored water supposed to be coffee; and our supper consisted of tomato soup, potatoes, two pieces of hamburg steak, boiled beans, and a cup of so-called coffee. And we further depose and say that we were fed like a bunch of dogs.

On Sunday morning there were some scrambled eggs placed at one end of the table, and the fellows at that end ate them all, and the rest of us at the other end of the table did not get anything but bread and so-called coffee, and we asked for more eggs from the deputy, and we were told by him that "If you are not satisfied, you can go to hell."

After that we went upstairs and the deputy followed us, and one of us went to talk to him and he pulled him down from the step outside and punched and beat him. After he was done with the fellow he jumped on one Meyer, and the said deputy was not able to lick him and went to get eight more deputies in the boarding house, and when they came in one of them shot in the house through the ceiling, and then he hit Meyer on his forehead with a gun and told him to wash his head, which was bleeding, and he answered and said that he was not going to do it and wanted to show it to the superintendent of the mine, but he was taken into the doctor's office to dress his wound.

On Monday morning we were going to work to earn enough money to get back, but when we found out that in our dinner pails there was only a piece of stinking bologna, two slices of bread, an apple, three soda crackers, and so-called coffee, we told them that we were not going to work, because we were hungry and did not have enough to eat in order to work, and have found out for sure that there is a strike in the district and did not want to be strike breakers.

We further depose and say, that on Monday we were confined in the boarding house, guarded by deputies, and kept as prisoners. The superintendent of the mine came and told us that if we would go to work the company will furnish us good board and lodging. We told him that we don't want to work. After that he took our names and requested us to go to work again, but we refused. Then the guards started to make trouble again. They passed all kinds of remarks and told us to go back if we had good shoes to walk with, and we answered and said that we are going to walk back, but we are not going to work as long as there is a strike.

The superintendent told us to wait until 4 o'clock in the afternoon in order to pay us. He came into the bunk house, made us line up one by one in the bunk house and let us enter in order to pass into the boarding house, and he handed us an empty envelope. Then we were taken by bunches of five outside of the boarding house and our pictures were taken and we were told to get out of there. We met a fellow on the road who took us into the union hall.

We further depose and say that we were guarded by deputies and soldiers in said bunk house and boarding house and were not permitted to go anywhere out of said bunk house and boarding house, against our will, and were like prisoners while we were at Quincy mine.

Albert Meyer, Stenly Deds, John Portko, Stenly Buttons, Pit Edort, Adam Lurick, Stulioz Buskoz, Frank Drzesviecki, Henry Heorft, Fred Miller, Otto Jäspr, Mik Smith, Pete Morris, Tam Wazle, Golm Kurta, Frank Fhishel, Joo Remen, Chas. Marks, Styf Supski, Wm. Thomas, Alfred Funkel, John Pisolko, Adam Kuiig, John Bielash.

Subscribed and sworn to before me, a notary public, in and for Houghton County, Michigan, this 29th day of September, A. D. 1913.

JOHN KIISKILA,
Notary Public, Houghton County, Mich.

My commission expires November 17, 1916.

At the same time the following affidavit was made by seven men employed through the Chicago Commissary Co. & Employment Agency for the Quincy Mining Co.:

STATE OF MICHIGAN, *County of Houghton, ss:*

We, the undersigned, being duly sworn, depose and say, that we reside in the city of Chicago, State of Illinois. That we went into the Chicago Commissary Co. & Employment Agency inquiring if there was any work to be had and we were informed that there is work in Michigan, either in the mines or on the railroad. We asked is there any trouble or strike in the district and were informed that there was no labor trouble or strike in that district, and we were promised to be paid at the rate of $2.50 a day, board would cost $5 a week, and the company pay every two weeks.

STANI SKINER,
FRANK FVODE,
EMIL BRAUN,
YACHNAL MILLER,
FRED BAUER,
ZOT BOLEFSKI,
TOM ZACKI.

Subscribed and sworn to before me, a notary public in and for Houghton County, Mich., this 29th day of September, A. D. 1913.

JOHN KIISKILA,
Notary Public, Houghton County, Mich.

My commission expires November 17, 1916.

The Houghton and Calumet Daily Gazette of October 1 said:

The strike breakers imported by the Quincy during the past two weeks all quit work yesterday morning and were paid off. They numbered about 75 and they all walked off the location toward Hancock as soon as paid. Just what their intentions are could not be learned yesterday afternoon.

During October many strike breakers were brought in by the Calumet & Hecla Mining Co., and some for other companies. Some of these men came from western points by way of Duluth, but most of them came from Chicago. The Houghton and Calumet Daily Gazette of October 28 said that over 1,200 new men had been brought into the district up to that time.

The following affidavit was made October 28 by men that were brought from Fargo, N. Dak.:

COUNTY OF HOUGHTON, *State of Michigan, ss:*

Barney McAllister and John McManus, being first duly sworn, depose and say that they are residents of Fargo, N. Dak; that on the 21st day of October, 1913, they went to the Western Employment Agency office in Fargo, where they could get a ticket to the Michigan mines for $2. They only intended to go as far as Superior, Wis., where they intended to stay. "One of the deputies at the station stepped up to us and we told him we wanted to get something to eat and would like to stay over night as we were tired." He said, drawing his gun: "You have to go to Calumet." Then we were taken to the cars. We were guarded until we got to Calumet where the train stopped. We were taken from the cars by five or six deputies, put in an auto and taken to one of the mining camps.

Deponents further saith not.

JOHN MCMANUS.
B. MCALLISTER.

Sworn to and subscribed before me, a notary public, this 28th day of October, 1913.

JOHN MALNAR, *Notary Public.*

My commission expires June 13, 1915.

VIOLENCE DURING THE STRIKE.

After the rioting which occurred on the first two days of the strike, when 16 men who tried to go to work were injured by the strikers badly enough for hospital treatment, there was but little disorder for three weeks, or until the middle of August, when work was resumed to some extent in the mines of the three largest companies. Complaints were made by men who had not joined the Western Federation of Miners that they had been threatened by federation men with bodily injury if they should return to work, and some men who had joined the federation asserted that they had by threats been coerced into joining it and that they were ready to give up their membership cards. Unquestionably some men were intimidated by members of the federation.

The situation was so quiet during the first three weeks of the strike that on August 11 the two batteries of artillery and one of the brass bands were sent home. From this time the military force was gradually reduced from the original number, 2,565, to about 500 in the latter part of September. The soldiers were not held in high esteem by the strikers, but were not execrated so much as were the Waddell "gunmen" or the deputy sheriffs, who were regarded as "scabs." The soldiers at first guarded the properties of the mining companies, though the strikers showed no disposition to injure property. As the soldiers were gradually sent home and as the number of deputies was increased, the duty of protecting property was left almost entirely to the deputies, and the soldiers gave most of their attention to following parades of strikers to see that men who wanted to go to work were not prevented. When work was resumed at some of the mines only day shifts worked, and the strikers got out in large numbers early every morning to meet the men going to work and try to persuade them not to work. If persuasion failed, the men were denounced as "scabs" and traitors to the cause of labor. If they could not thus be intimidated, they were in some cases roughly handled or beaten. As much as possible the soldiers and deputies stopped the disorder that occurred during this early morning "picketing." Crowds of strikers were kept constantly on the move, and the picketing parades were closely attended by the soldiers. Frequently these parades were led by women, and a number of them were arrested for abusing men going to work, grabbing their dinner pails or otherwise creating a disturbance. Fifteen women were arrested one morning in Laurium village. Arrests were made under act 163, Public Laws of 1867, Compiled Laws of 1897, section 11343, as follows:

(11343.) That if any person or persons shall, by threats, intimidations, or otherwise, and without authority of law, interfere with, or in any way molest, or attempt to interfere with, or in any way molest, or disturb, without such authority, any mechanic or other laborer in the quiet and peaceable pursuit of his lawful avocation, such person or persons shall be deemed guilty of a misdemeanor, and on conviction by a court of competent jurisdiction shall be severally punished by fine of not less than $10 nor more than $100, or by imprisonment in the county jail where the offense shall have been committed, not less than one month nor more than one year, or by both fine and imprisonment, in the discretion of the court; but if such punishment be by fine, the offender shall be imprisoned in such jail until the same be paid, not exceeding 90 days.

Neither the soldiers nor the deputy sheriffs interfered with the parades after the hour men went to work in the mines unless they considered there were signs of disorder. In a number if instances,

however, clashes occurred on the streets between the soldiers and crowds of strikers, and in some cases the strikers were dispersed at the points of bayonets, or by mounted soldiers riding through the crowds. Gen. Abbey justified this breaking up of crowds by the riot law of the State, sections 11334 to 11341 of the Compiled Laws of 1897. The first three sections follow:

(11334) SECTION 1. If any persons to the number of 12 or more, being armed with clubs or other dangerous weapons, or if any persons to the number of 30 or more, whether armed or not, shall be unlawfully, riotously, or tumultuously assembled in any city, township, or village, it shall be the duty of the mayor and each of the aldermen of such city, the supervisor of such township, the president and each of the trustees or members of the common council of such village, and of every justice of the peace living in such city, township, or village, and also of the sheriff of the county and his deputies, to go among the persons so assembled, or as near to them as may be with safety, and in the name of the people of this State to command all the persons so assembled immediately and peaceably to disperse.

(11335) SEC. 2. If the persons so assembled shall not, upon being so commanded, thereupon immediately and peaceably disperse, it shall be the duty of each of said magistrates and officers to command the assistance of all persons there present in seizing, arresting, and securing in custody the persons so unlawfully assembled so that they may be proceeded against for their offenses according to law.

(11336) SEC. 3. If any person present, being commanded by any of the magistrates or officers aforesaid to aid and assist in seizing and securing such rioters or persons so unlawfully assembled, or in suppressing such riot or unlawful assembly, shall refuse or neglect to obey such command, or when required by any such magistrate or officer to depart from the place of such riotous or unlawful assembly shall refuse or neglect so to do, he shall be deemed to be one of the rioters or persons unlawfully assembled, and shall be liable to be prosecuted and punished accordingly.

General Order No. 1, issued by Maj. A. H. Gansser, commanding the Third Regiment of Infantry, and dated Mohawk, Mich., August 31, contained the following item:

With the reduction of our military forces in the copper mines strike zone, the officers and men of this command are urged to redouble their vigilance, mindful of our mission, "To assist the civil authorities in the preservation of law and order and the safeguarding of life and property," mindful, too, that we are to perform this duty with firmness and kindness. Gen. Abbey directs that hostile crowds of more than 30 are to be peaceably dispersed. Rioters refusing to disperse are to be arrested, whether men, women, or children; this is to apply also to guard lines about mine properties.

The soldiers were not kept under proper discipline. One of the first orders issued by Gen. Abbey, General Order No. 3, dated July 26, 1913, provided:

Where such commanders of regiments find conditions warrant they may excuse applicants for limited time only. Not more than one man from any company, troop, or battery may be excused at the same time.

Gen. Abbey himself admitted that this order was not enforced. The result was that crowds of privates were daily seen on the streets; they visited saloons, and many of them became intoxicated, and some carried revolvers while they were in an intoxicated condition. They were reported to have visited disorderly houses.

On the night of August 12 a miner, a member of the Western Federation of Miners, was shot by a corporal near the Quincy mine because of neglect to obey an order to halt. The bullet took effect in one of his knees and in the calf of his other leg. Later during the same night a private was waylaid by an unknown person at South Kearsarge, and he was so badly beaten on the head that he was unconscious for several hours. On August 13 a private, who had been

kicked by a cavalry horse 10 days previously, died. No other soldiers were injured during the strike.

At Painesdale, about 5.30 p. m. on August 15, John Kollan, a striker, attempted to go to his boarding house by a short-cut path which had been used before the strike. A deputy sheriff, an employee of the Copper Range Consolidated Co., warned him not to go that way, and after a parley he went on. The deputy later asserted that Kollan threatened him, but this was denied. The deputy reported the matter to the man in charge of the Waddell men, and they decided to arrest Kollan on a charge of intimidation. Two deputies and four Waddell men then went to the boarding house. One of them laid his hand on Kollan's shoulder and told him he was arrested, but he broke away and ran into the house. Several other men who were playing tenpins in the yard also ran in the house, and it is claimed that one of the deputies was hit in the head by a tenpin. Thereupon the Waddell men and deputies surrounded the house on two sides and began firing at the inmates through three windows on one side and the back door. They claim that a shot was fired from the house. When the firing began there were 15 people in the house, including two women and four children. Four men were shot, and a baby in its mother's arms was powder burned. Firing continued until the six men had exhausted the bullets in their revolvers. One of the men in the house, Diazig Tizan, was killed instantly, and one of the wounded men, Steve Putrict, died the next day. Another one of the wounded men was shot while he was sitting at a table eating supper. Neighbors later testified that the Waddell men and deputies, after shooting up the house, went into the street and gathered up stones and empty bottles and put them around the house to indicate that they had been used as missiles against them. These men then made a complete search of the house to find weapons, but did not find any. If a bullet was fired from the house no trace of it could be found, but the tracks of many bullets fired into the house were found in the walls.

Anthony Lucas, prosecuting attorney of Houghton County, visited the scene of the shooting, and after an investigation denounced it as wanton murder, and called upon the sheriff, James A. Cruse, to arrest all of the six men. The sheriff, however, allowed them all to escape and for several days their whereabouts were unknown. They fled to an adjoining county, and an attorney called on Lucas and told him that they would be returned if the charge against them was reduced from murder in the first degree. Lucas refused to compromise, and at the inquest the next week the men were present. After the inquest all six of them were indicted by a justice of the peace (who acts in such cases as a grand jury in other States) for murder in the second degree. The bond of each of the six men was placed at $5,000 for the indictment in each of two cases, making $10,000 bond required for each, and in default of bail they were committed to jail to await trial. Afterwards they were liberated on bail.

On Sunday, August 17, when Diazig Tizan and Steve Putrict were buried, there was a great funeral parade of strikers at Calumet, and at the cemetery Federation leaders made speeches denouncing the

brutality of the Waddell men and deputy sheriffs. In the parade were displayed placards bearing the following inscriptions:

In memory of our murdered brothers.
Our Lord said: Do not take what you can not give.
Give not thy boughs of cedar; give back my life, oh thugs.

As a result of a clash between deputy sheriffs and a body of strikers and women, a girl 14 years of age, named Margaret Frazakas, daughter of a widow, was shot in the head, at North Kearsarge. An early morning picket parade of strikers, women, and children, from 150 to 200 in all, took place there on September 2. The soldiers prevented them from going near the mine, but while the soldiers were at breakfast the parade was stopped by 15 deputy sheriffs. When this occurred the paraders were going away from the mine and toward a county road, about 300 yards distant. The women and children were in front of the crowd when they were halted by the deputies at a crossroads. Epithets were passed between the crowd and the deputies, but no stones were thrown, clubs used, or arms fired, until the deputies began firing, and no shots were fired except by them. One of the deputies, a mine captain (foreman) gave the order to fire, and all of the deputies fired until they emptied their revolvers, about 90 shots in all. One of the first shots struck Margaret Frazakas down, but marvelously no other person was hit. The course of three bullets in a house on the corner showed that some of the shots were low enough to have struck persons, and one of the shots that pierced the side of the house came within a foot or two of hitting a man and child inside. Doubtless, however, many of the shots were fired in the air, else it is hard to account for only one person being injured. The girl was struck above the right ear by a bullet, and part of her brains oozed out. For days she was supposed to be fatally wounded. She was taken to the hospital at Laurium, where she remained for weeks. Her recovery was considered to be one of the most remarkable instances of the kind on record.

The deputies, after they had emptied their revolvers, did not take time to reload, but started to run, and they were pursued by the strikers, who not until then began to throw stones at them. They have not yet been brought to trial.

In Keweenaw County, where there are two mines, and where the Western Federation of Miners was very strongly organized, there was but little disorder during the first two months of the strike. John Hepting, the sheriff, had only a few deputies, and those he appointed at first were members of the Western Federation of Miners.

In July the local union of the federation granted written permission for members of the federation to continue as firemen at Mohawk and Ahmeek mines, to keep the pumps operating for the purpose of affording fire protection and providing electric lights at those mine locations. Trouble arose later at the Mohawk mine when the management attempted to require a master mechanic to attend the compressor pump for pumping out the water that was accumulating in the mine. The management brought nonfederation men from the company's stamp mill at Gay, 18 miles distant, to act as firemen. These men were intimidated by the strikers and left Mohawk because they deemed it was unsafe for them to remain there. At Ahmeek also the federation firemen were withdrawn.

When the first Ascher men were brought in on the night of September 29 some shooting occurred. They were brought in in a Pullman car to Ahmeek mine. Sheriff John Hepting and Prosecuting Attorney J. A. Hamilton of Keweenaw County investigated this shooting and reached the conclusion that the first shots were fired by men within the car. Thereupon they withdrew the blanket gun license which had been issued to the Ahmeek Mining Co. permitting employees of the company to carry arms. The prosecuting attorney stated that when these licenses had been issued the officers of the company had given a verbal promise to supply him with the names of those to be armed. He had required this promise because he feared that the company might bring in men from outside and arm them. These terms had not been kept by the company and therefore the license was revoked.

Gen. Abbey summoned the sheriff and prosecuting attorney to appear before him and expostulated with them about their withdrawal of the license for the guards at Ahmeek mine and said that this action would force the mine watchmen to carry their weapons openly. The result was the telegram to the governor, which follows:

EAGLE RIVER, MICH., *October 2, 1913.*

Hon. W. N. FERRIS,
Governor, Lansing, Mich.

DEAR SIR: Due to the stirring conditions existing in Allouez Township since Monday evening, Setember 29, I find the situation is entirely beyond my control. Private citizens passing along the county road through said township have been fired upon from ambush and after careful investigation have been unable to apprehend any of the offenders. Several persons have been shot—no one seriously injured as yet. At a special meeting of the board of supervisors, called this day for discussion of this matter, with advice of prosecuting attorney and board of supervisors, I deemed it advisable to notify you and ask your aid in handling the situation, which is beyond my control.

JOHN HEPTING,
Sheriff.
J. A. HAMILTON,
Prosecuting Attorney.
F. X. KAISER,
Clerk.
S. R. SMITH,
Supervisor, Allouez Township.
WESLEY CLARKE,
Supervisor, Eagle Harbor Township.
D. L. VIVIAN,
Supervisor, Sherman Township.

During October there was more disorder than during previous months. Most of it occurred at Allouez and other mines in the northern end of Houghton County and at Ahmeek and Mohawk mines in the southern end of Keweenaw County. On October 3, 24 artillerymen were sent to Ahmeek, which increased the military force in Keweenaw County to 75 mounted men. On October 6 a clerk employed by the Ahmeek Mining Co., while passing a group of the strikers, was shot at twice. The second shot passed through his body. He stated that there were about 10 men in the party that fired on him, and that they fled when he fell. On October 15 Sheriff Hepting wrote to Gov. Ferris that in all Keweenaw County he was able to find only five men who would stand by him as deputies, protect the men who wanted to go back to work, and prevent violence.

He also said that he would be powerless without the aid of the troops, and without them the mines could not be operated.

On the morning of October 8 Deputy Sheriff James M. Pollack, jr., was found in an unconscious and dying condition on the sidewalk leading from Houghton to Hurontown. He had a number of wounds in his scalp and a bullet hole in his head. He lived less than two hours and never regained consciousness. On the same morning Joseph Minerich, bleeding profusely from a wound in the abdomen, walked into a boarding house at Hurontown. He was taken to a hospital in Hancock and died the night of October 9. Until his death he maintained that no one else was implicated in the shooting. However, nine men suspected of having been with Minerich at the time of the shooting were arrested on the charge of murder. One of these men, named Luka Pease, a brother-in-law of Minerich, is alleged to have made a statement that he, Minerich, and another man were walking on the sidewalk toward Houghton, that Minerich said something to Pollack which Pease did not hear, that thereupon Pollack shot Minerich in the stomach, and that while Pease was holding Pollack the latter was shot by Minerich. At the inquest a physician testified that in his opinion Pollack would not have been able to shoot anyone after he received the shot in his own brain. The case against the nine men arrested was set for hearing on October 29 before Judge Little.

On October 23, 35 strike breakers were brought to Calumet. While the train was stopped at Hancock, snowballs and stones were thrown at the car conveying the men. All the windows in this car and some in other cars were broken. Seven men charged with stoning the train were arrested. One of them was Dan Sullivan, president of District Union No. 16, Western Federation of Miners.

The newspapers reported several alleged attempts to wreck railroad trains in various parts of Houghton County by means of rails being spread or dynamite being placed on the tracks. This tampering with the tracks caused no injury, and the Miner's Bulletin claimed that it had been done to prejudice the public against the strikers, and that it was significant that the locomotive engineers knew just where to stop before running into danger. These incidents occurred after the agent of the Bureau of Labor Statistics had left the district.

In Ontonagon County, where there are several small mines, the Western Federation of Miners was even more strongly organized than it was in Keweenaw County. As no mine workers tried to go back to work in Ontonagon County, there was no disorder of any kind until the middle of October, when the Winona mine was reopened. The sheriff appointed only a few special deputies, and they were members of the federation.

Considering the number of men involved in the strike, the length of time the struggle was continued, and the bitterness caused by bringing soldiers and Waddell men to the district, the strike was remarkably peaceful. The only persons killed were two of the strikers, who were wantonly shot down by Waddell men and deputies at Painesdale, and a deputy and striker, who killed each other near Hurontown. The leaders of the Western Federation of Miners in charge of the strike repeatedly warned the strikers against car-

rying firearms and using intoxicants, and very few were arrested for these offenses. Undoubtedly many men that started to go back to work were intimidated and some abused and beaten. On the other hand, the deputy sheriffs and Waddell men acted with great brutality toward the strikers, and in many cases beat even women with clubs or night sticks.

In many cases it would be impossible to determine who was the aggressor. The real facts could be ascertained only by a court with power to subpœna witnesses, and even then there would doubtless be miscarriages of justice. The only conclusion that one can reach is that some of the violence was caused by the strikers and for some of it peace officers were responsible.

One of the most remarkable features of the strike was that, in spite of the excitement and passion which prevailed, no property of the mining companies was injured by strikers and, in fact, none showed any disposition to injure property.

During the course of the strike many of the strikers and some women were arrested on charges of intimidation or assault. When they were given hearings before justices of the peace, many of the cases were dismissed for want of sufficient evidence and in other cases the persons were released on peace bonds of from $100 to $300. Some of the accused persons were fined by the justices and some were bound over to the circuit court. Any person tried before a justice of the peace in Michigan has the right to demand a jury trial in the justice's court. In Houghton, Keweenaw, and Ontonagon Counties there is no grand jury, but justices of the peace bind over to the circuit court all persons charged with serious offenses.

The following table shows the number of persons charged with various offenses committed in connection with the strike who were given hearings before justices of the peace, according to a transcript of the various dockets, up to the dates mentioned:

Court.	Recorded to—	Number of persons.	Dismissed.	Acquitted.	Found guilty.	Bound over.	Adjourned.	Placed under peace bond.
Justice Little's	Oct. 15	43	12	1	.....	7	20	3
Justice O'Sullivan's	Oct. 8	58	16	.....	1	11	27	3
Justice Eichkern's	Oct. 9	35	8	.....	1	5	21	.....
Judge Armit's	Oct. 15	34	16	2	7	2	7	.....
Judge Jacolo's	Oct. 7	27	4	2	1	4	16	.....
Judge Fisher's	Oct. 10	56	17	2	4	7	26	.....
Judge Bartonen's	Oct. 10	2	.....	.....	.....	.....	2	.....
Justice Medlyn's	Oct. 11	8	1	.....	.....	3	4	.....
		263	74	7	14	39	123	6

The following is a list of the charges against persons for offenses committed in connection with the strike, and the number of persons against whom each offense was charged up to the dates mentioned in the table:

Males:

Assault and battery	17
Assault with intent to commit murder	2
Assault with intent to do great bodily harm	19
Attempt at destruction of life or property	6
Carrying concealed weapons	10
Creating noise and disturbance	10

Males—Concluded.	
Drunk and disorderly	3
Felonious assault	1
Inciting riot	32
Interfering with an officer	3
Intimidation	56
Loitering on sidewalks and street corners	1
Murder	15
No charge or not reported	7
Resisting an officer	17
Riotous assembly	5
Simple assault	3
Slander	1
Threatening to kill and murder	4
Unlawful assembly	1
Using indecent language in presence of women	1
Violation of ordinance No. 2, Red Jacket	1
	215
Females:	
Assault and battery	7
Assault with intent to do great bodily harm	1
Inciting riot	5
Intimidation	27
Resisting an officer	6
Simple assault	2
	48

The 15 persons charged with murder include 4 Waddell men and 2 deputy sheriffs charged with the murder of 2 strikers at Painesdale on August 15, and 9 men charged with the murder of Deputy Sheriff Pollack on October 8, when a striker also was killed. Of the 263 cases, all were against strikers or strike sympathizers, except the 6 men charged with murder at Painesdale. When the strikers mistreated the men that went to work during the strike they were arrested and fined, imprisoned, or bound over. But when peace officers, deputy sheriffs, soldiers, or Waddell men engaged in conflicts with the strikers and the officers were the aggressors in beating or riding down the strikers, there was no one to arrest the officers. This accounts for the fact that practically all of the cases in the courts of justices of the peace were against strikers.

The September term of the Houghton County circuit court was opened on September 2, and continued until September 20. Judge P. H. O'Brien presided. During this term the most serious cases against strikers were tried.

Louis Foder, charged with assault with a pistol with intent to kill a deputy sheriff, admitted that the pistol was discharged in a scuffle, but claimed that it was accidental, and after the judge, jury, and prosecuting attorney had inspected Foder's home, where the shooting had occurred, the judge, on motion of the prosecuting attorney, directed a verdict of not guilty.

Joseph Mihelcich was charged with malicious attempt to destroy property. He had been arrested while passing a mine shaft, and some pieces of dynamite were found in his coat pocket. He claimed that he had been using dynamite for blowing up stumps in a farmer's field, who had promised him the wood from the stumps. In this case the jury reported a disagreement.

George Males, charged with assault with intent to do great bodily harm less than murder, in resisting an officer, was convicted only of simple assault, and appealed his case.

The statutes of Michigan provide that in each county the sheriff, county treasurer, county clerk, and judge of probate shall select the names of persons to act as petit jurors. The panel of 36 jurors that served during these trials was composed largely of employees of mining companies, and nearly all of the 36 were connected directly or indirectly with the companies. The only other striker tried during the September term of court was charged with carrying a concealed weapon, but was discharged. About 10 cases against strikers were continued over to the next term. These cases were those of persons charged with carrying concealed weapons, intimidation, and resisting an officer.

At the October term of the circuit court in Keweenaw County three cases connected with the strike were tried. The defendants in two cases were acquitted, and the other case was nolle prossed.

ARBITRATION PROPOSALS UNAVAILING.

The law of Michigan which provided for the settlement of strikes by a State board of arbitration, act 238, Public Laws of 1889, was repealed by the legislature of 1911.

The mining companies having refused even to acknowledge receipt of the communication from officials of the Western Federation of Miners, dated July 14, 1913, it was, of course, useless for the federation to ask the managers for a conference to arrange terms of arbitration. Two arbitration propositions made by the governor of Michigan and one made by the United States Department of Labor were accepted by the federation officials but were flatly refused by the mine managers. The managers held semiweekly meetings to discuss the strike situation and on all matters relating to the strike they acted together. All three propositions for arbitration were rejected by the managers on the ground that they would not deal with the Western Federation of Miners, for the reason, they asserted, that it was a lawless organization. They also claimed that there would have been no strike if their employees had not been incited to strike by agitators from Denver.

On July 29, six days after the strike began, C. E. Mahoney, vice president, and A. A. Kerr, attorney in Michigan for the federation, called on Gov. Woodbridge N. Ferris at Lansing and requested that he endeavor to arrange for holding a "joint conference of both sides" to the controversy, with the view of bringing about a settlement of the strike. In compliance with this request Gov. Ferris telegraphed Gen. Abbey as follows:

LANSING, MICH., *July 29, 1913.*

Gen. P. L. ABBEY,
Michigan National Guard, Calumet, Mich.

Present the following message to mine owners and employees involved in strike: "Mine owners and employees involved in strike: The welfare of this great Commonwealth demands a speedy settlement of your industrial dispute. As governor of Michigan, I offer my best services in joint conference of both sides to be held at Lansing at earliest possible date."

WOODBRIDGE N. FERRIS.

On July 30 Gen. Abbey presented the governor's proposition to the managers at their meeting at the Houghton Club and, later in the day, presented it to officials of the Western Federation of Miners. The federation officials accepted the proposition, but the managers rejected it, their reply being as follows:

Gen. P. L. ABBEY,
Commanding Michigan National Guard.

SIR: In response to the message from his excellency the governor of Michigan to the mine owners and employees involved in strike, presented to us through you at a conference held this day for that purpose, and to which we have given careful consideration, we, who are the managers and superintendents of the mines affected by the existing situation, on behalf of the several companies and their numerous stockholders, as well as on behalf of the employees, who in a large majority have been and are not only willing but anxious to continue at work, desire to express to you, and through you to the governor, our high appreciation of the offer of his services in the pending dispute and our deep obligation to him therefor.

With the utmost respect for him personally, and for the high office which he holds with so much honor to the State of Michigan, and with great regret that the circumstances seem to us to render it necessary, we feel obliged to say that for the welfare and good name of the State as a whole, for the best interests of our employees, for the interests of this entire community, and as making for continued and lasting industrial peace and quiet in this district, we should not and can not enter into or take any part in a joint conference with the leaders or representatives of the Western Federation of Miners, which organization is solely responsible for the conditions now existing, nor with any representatives of those who are actively engaged in the strike, and who falsely assume to represent the great body of our employees.

In thus stating our position we feel that it is due to his excellency, as well as to yourself, that we should also state our reasons for this conclusion.

The copper mining district of Michigan has operated its mines on an extensive scale for upward of 50 years. In all that time there has been no general strike among the employees. There has never been any serious labor disturbance or dispute. The few which have occurred locally at some mine locations have been speedily and satisfactorily adjusted between the managements and the employees. There have been satisfaction and contentment on the part of those employed and good feeling and mutual respect between employers and employees. We believe it can be said truthfully that in this mining district the conditions of labor, the consideration for the employees, the means taken for their comfortable housing, for their general welfare, for their health, for the education of their children, and their fair and generous treatment in every respect have not been excelled anywhere in any industry of like kind.

The history of the Western Federation of Miners is well known. That organization was directly responsible for the strike in the Cœur d'Alene district, the Homestake strike, the strike on the Mesaba Range in 1907, the recent strike in the Porcupine district in Ontario, the strikes at Bingham and at El Paso, and others which may be recalled. Each of those strikes was accompanied by lawlessness, riots, assaults, violence, destruction of property, and bloodshed. They resulted in the bloody riots of Colorado; the blowing up of the railroad station, with great loss of life; the assassination of Superintendent Collins of the Smuggler Union; the blowing up of Mr. Bulkeley Welles of the Smuggler Union; the murder of ex-Gov. Steunenberg of Idaho. Some of these strikes were under the leadership of some of the leaders of the present one. All of them were organized, incited, instituted, and called by the Western Federation of Miners.

About the year 1907 this federation, with such a record behind it, began to send their organizers from the West into this district. They have carried on a systematic attempt to secure the complete domination of the mine laborers of this district.

They have attempted to breed and engender discontent among some 20,000 employees of the mining industry, and it is but natural that they secured many recruits. For a long time it has been definitely known that as soon as their leaders felt that they were strong enough a strike would be called.

It is reliably known to us that the federation succeeded only in a small measure in attracting to itself the employees of the mining industry in this district. The majority, and on reliable information the large majority, of the employees declined to affiliate with them. On direct information, a very large number believed that they had no

grievance to strike for and did not wish to strike; on reliable information, the greater part of them desired to continue at work and now desire to resume work.

On the 23d of July the strike called by the officials of the Western Federation of Miners took place. It was and is under the direction of skilled and experienced strike leaders of the federation, who are not residents of this district or of this State. The strike took out only those affiliated with that organization on the morning when it went into effect. Many of our employees continued at work for the day.

A campaign of violence and riot was at once instituted. The officers of the counties were without power to maintain order or to restrain lawlessness. By threats publicly made, including threats of destruction of their homes in their absence, violence to their families, and death to themselves, the men of the night shift were deterred from going to work underground. Mechanics and laborers were driven from their employment by riotous mobs, armed with firearms, clubs, rocks, iron bars, and other weapons. Mechanics, miners, and laborers who desired to work, or while at work, were cruelly beaten and many were severely injured. One old man 75 years of age, who had worked in the mine for more than 30 years, was beaten and seriously injured. Another of like age was driven from his work at the point of a gun. The officers of the law were helpless, derided, cursed, and their authority ignored. A deputy sheriff's star was a signal for an attack on the wearer. Officers were assaulted and beaten. Active resistance undoubtedly would have resulted in the destruction of property and the loss of many lives. A store building and its contents were burned after the proprietors announced that they must refuse credit. The men were driven from the pumps and the mines were flooded with water, causing great destruction and damage. At some of the mines even the operation of pumps for the fire protection of the community was forcibly prevented and the men driven out. At every branch of the mining industry at the several mining locations the labor of the employees willing and anxious to work was stopped forcibly, riotously, by threats and intimidation, by violence and assault, by woundings and beatings. For the remainder of the week every mining location was wholly at the mercy of these rioters, and millions of dollars' worth of property absolutely in their hands.

All this was but the repetition of the results which have invariably followed the calling of a strike by the councils of the Western Federation of Miners.

Of their membership in this community many of our employees, since the strike was instituted, have been taken from their homes and intimidated and forced under threats into joining the federation. The strikers have paraded by day and by night, armed with weapons of all kinds, and have forced men, unwilling to do so, to join their parades. The large majority of our employees at the mine locations were for the time terrorized into complete submission to these riotous strikers, who are those who have affiliated with the Western Federation of Miners, and none others.

There was no call by these strikers for conference or for mediation or for adjustment while they thus completely dominated the situation.

There is therefore no industrial dispute between the mine owners and employees. Under the circumstances and because of our knowledge that the majority of our employees have at no time sympathized with the purposes of the federation, and have been and are now willing and anxious to continue in their employment, we can not recognize the right of the Western Federation of Miners to intervene or to assume to represent our employees with respect to the present conditions, or in any other manner whatsoever.

The suggested joint conference of botn sides could mean nothing other than a conference in which one side would not be our employees or representatives of our employees, but would be the Western Federation of Miners or its representatives, whose sole object is undeniably to establish the federation in a dominant control of the mining industry of this district. With them we can not confer, and, with all respect to his excellency, we feel that we can not enter into a joint conference with or in any manner recognize that organization, which, most certainly to our knowledge, does not represent our employees, with the great majority of whom we have no dispute of any kind.

It has constantly been the practice in the past and will continue to be the practice in the future for managements of the various companies to confer freely with their own employees or with representatives of their employees on any matter relating to improved working conditions or real or supposed grievances and willingly to redress or correct any wrongs. No intervention of any kind was or will be necessary for such joint conferences; but to confer or treat with an organization foreign to your territory and to the interest of our employees and not in any manner representing them is something which we can not contemplate.

We desire to be clear and emphatic in conveying to you our opposition to the Western Federation of Miners, in the firm belief, based upon its record, which is a matter of history, that the domination of this district by that particular organization, for which purpose alone this strike has been incited and instituted by that organization, can result in nothing but harm to the best interests and welfare of our employees and of this entire community, and can conduce to nothing but a continuance of discontent, which is their doctrine, and a constant recurrence of lawlessness and disorder, which seem to follow upon their methods.

In spite of the beneficent effect of the presence of the Michigan National Guard under your efficient command, which has given to the people and the business interests of this community a feeling of confidence and a comparative peace and quiet, yet the intimidation of our employees, threats of personal violence, of the destruction of property, and even of the taking of human lives, continue to this day. No later than yesterday employees of more than one of our companies, nonsympathizers with the Western Federation of Miners, were set upon and cruelly beaten. Under no circumstances would we consent to confer with strikers or representatives of strikers or to compromise any differences or consider alleged grievances with a body of men who are thus lawlessly conducting themselves.

Under all the trying circumstances of the riotous proceedings of the days before your arrival we have refrained from the employment or the use of private armed guards. In the belief that the prevention of bloodshed was the first and the highest consideration, we prohibited and prevented the use of firearms or deadly weapons against those who were attacking our property and our employees. We have relied solely upon the constituted authorities for their protection. The local officers of the law, with conscientious and zealous desire to that end, found themselves without power to cope with the lawlessness, disorder, violence, and riotous conduct which ensued from the first inception of the strike. Through the request of his excellency, preferred by officials charged by law with the exercise of discretion in the matter, the Michigan National Guard, under your command, has come to this community for the sole purpose of the maintenance and enforcement of law and order, without favor either to mine owners or strikers.

We have imported no strike breakers. We have imported no mechanics, miners, or laborers. Our old employees, to a large majority within our own knowledge, who have no grievance and with whom we have no dispute, are willing and anxious to resume their work, from which they have been driven by force and violence on the part of a comparatively small but well-organized and well-officered body of strikers, who have submitted themselves to the influence and domination of the Western Federation of Miners.

Our only request of the great Commonwealth of Michigan is that our old employees who are willing and anxious to resume work may be permitted to do so without molestation from those who have undertaken and thus far succeeded by intimidation and personal violence in preventing them in the exercise of the right which the laws of Michigan assure to them to labor without interference or molestation. If our employees could to-day be assured of their entire freedom from unlawful molestation, if they could feel sure that their homes and their families would be safe in their absence, we should be assured of an immediate or speedy settlement, not of an industrial dispute which has no existence, but of a situation which if continued will mean that the organization known as the Western Federation of Miners, its local councils and those of our employees who have affiliated with it, and who alone constitute the active strikers, are not amenable to the laws of this State.

We have every assurance and a confident belief that our attitude as herein stated to you with reference to the present deplorable situation and with reference to the domination of the district by the Western Federation of Miners has the hearty support and approval of the entire business interests and the responsible citizenship of this community.

It is our belief, respectfully expressed, that the best and highest welfare of this great Commonwealth of Michigan demands as a foremost consideration that its laws be enforced, that lawlessness, violence, and disorder be restrained, and that the miners, mechanics, and laborers who desire to work be permitted to do so without violation on the part of any organization, combination of strikers or individuals, of the statute which makes it an offense against the peace and dignity of the people of this Commonwealth, by threats or intimidations or otherwise, and without authority of law, to interfere with or in any way to

molest or disturb any mechanic or other laborer in the peaceful pursuit of his lawful avocation.

We again wish to express our profound appreciation of the offer of his excellency communicated to us through you. If the situation were such as to admit of the suggested joint conference, we should gladly and thankfully accept the offer of his excellency the governor. We trust that we have shown by the statement of a situation which can be fully substantiated sufficient reasons for respectfully declining to enter into any conference with the Western Federation of Miners or its representatives.

We also wish to express to his excellency and to yourself our full appreciation of the prompt action which resulted in the presence in this district of the Michigan National Guard, which under your efficient command, with favor toward no interest, either of mine owners or employees, has in so large a measure restored to this community that peace and order and observance of law which makes in the highest degree for the welfare of the community and of the entire State.

Very respectfully,

JAS. MACNAUGHTON.
F. W. DENTON,
Copper Range Consolidated Co.
CHAS L. LAWTON.
THEO. DENGLER.
R. M. EDWARDS.
J. L. HARRIS.

July 30, 1913.

The following mines are represented by the above signatures:

Mr. James MacNaughton is general manager of the Calumet & Hecla Mining Co., Ahmeek Mining Co., Allouez Mining Co., North Kearsarge Mine, South Kearsarge Mine, Tamarack Mining Co., Osceola Consolidated Co., Laurium Mining Co., La Salle Copper Co., Isle Royale Copper Co., Superior Copper Co., St. Louis Copper Co., and Centennial Copper Mining Co.

Mr. F. W. Denton is general manager of the Baltic Mining Co., Champion Copper Co., and Trimountain Mining Co.

Mr. Charles L. Lawton is general manager of the Quincy Mining Co.

Mr. Theodore Dengler is agent of the Wolverine Copper Mining Co., and Mohawk Mining Co.

Mr. R. M. Edwards is president and general manager of the Franklin Mining Co., Rhode Island Copper Co., Indiana Mining Co., North Lake Mining Co., Algomah Mining Co., and general manager of the South Lake Mining Co.

Mr. J. L. Harris is general manager of the Hancock Consolidated Mining Co. and Oneco Copper Mining Co.

The second effort of Gov. Ferris to effect a settlement of the strike was through Judge Alfred H. Murphy, of the circuit court of Wayne County. Judge Murphy spent nearly two weeks in the copper range, acquainting himself with labor conditions in the mines and the causes of dissatisfaction that had led to the strike. On August 14 he held a conference with the mine managers at the Houghton Club, and urged them to agree to arbitration of the strike. He even went so far as to propose arbitration with the question of recognition of the federation eliminated, he having been assured by the federation officials that they would not insist upon a consideration of that question. The reply of the managers follows:

At the recent meeting with you of the mine managers of Houghton and Keweenaw Counties, the operations of whose mines is affected by the existing strike conditions, you submitted to us the following question:

"Eliminating any recognition now or hereafter of the Western Federation of Miners, what terms and conditions of labor will you authorize me, as the representative of the governor, to present to anyone interested as the basis for the reemployment of your men?"

You are authorized as representative of the governor to state that the men will be reemployed on the same terms and conditions of labor as existed at the several properties prior to the inception of the strike. That in such re-

employment the fact that a former employee has been a member of, or otherwise affiliated with, the Western Federation of Miners, will not of itself be considered as a bar to his reentering our employ. But we reserve the right to use our individual discretion as to the reemployment of any who may be known to have engaged in acts of agitation, lawlessness, violence, or intimidation, or inciting thereto. After such employment and the cessation of strike conditions any body of the employees at any mining property or affected individuals brought to the attention of any one of us through his own employees will be given full consideration, with the desire, as in the past of each of us severally, to correct any wrongs that we may find to exist, either in individual instances or in general conditions.

The foregoing answer to your question is the basis for the reemployment of our men. The great differences in working conditions existing at the various mines have made it impossible to formulate a statement of the terms and conditions of labor which could be made uniformly applicable to the several mines with justice to their respective employees or with fairness to the several mining companies. But you are further authorized, assuming such reemployment ensues, to state with respect to matters mentioned by you at our conference.

As to wages, let us say that the adoption of a uniform minimum wage is impracticable, owing to the great differences in conditions at the several properties. But to you, as the representative of the governor, we will when the work is resumed, and for a reasonable period thereafter, submit our pay rolls and all material data, and if, after being informed as to attendant conditions and circumstances, you find any iniquities in specific individual instances, they will be remedied in accordance with your recommendations. If, taking into full consideration the living and working conditions, the advantages and privileges furnished to or for the employees, the costs of mining and production, and all material circumstances, you find at any of our mines that the general rates of wages as to any class or all classes of employees are inadequate, unfair, or inequitable, we will severally give full and fair consideration to your recommendations in that regard.

As to the working hours, we have each had for some time under consideration a change in this respect, with the intention, if and so far as found practicable, to bring about as near an approach as conditions may warrant to an eight-hour day for our underground employees, a portion of whom have heretofore been in close approximation to that condition. The present situation does not alter our intentions. Any change of this character involves to a great extent a reorganization of the operations and for that reason must be a gradual one. The time within which it can be brought about can not now be stated. We can now state only the fact that it has been and is under favorable consideration.

As for the one-man drill, we can only state that with respect to this, as to all our operations, our efforts, in advance of all other considerations, are exerted toward securing the safety of our employees. The conditions of competition, the low grade of our rock as compared with other districts, the increasing expense, with debts and other conditions, have made the use of the one-man drill imperative for the continuation of operations.

The request for nonemployment of boys under 18 is clearly a matter for the legislature. The foregoing involves as a condition the early cessation of strike conditions, the elimination of any recognition now or hereafter of the Western Federation of Miners, and the withdrawal from that organization of those of its members who may be reemployed. This is not imposed as a condition of an arbitrary nature, nor is it stated through ill will, but must be recognized that in view of the nature of the teachings and utterances of such leaders in their addresses to their members and to the public with respect to ourselves, our officials, our employees, and our companies, there can not be a restoration of harmony, good feeling, and mutual respect between employers and employees, between bosses and men, or among the men themselves in any other way. To act otherwise on our part, to fail to bring about such restoration, most essential to the welfare of our men and of the community and the State, would be to invite an early renewal of strife.

James MacNaughton, general manager of the Calumet & Hecla Mining Co., Ahmeek Mining Co., Allouez Mining Co., North Kearsarge Mine, South Kearsarge Mine, Tamarack Mining Co., Osceola Consolidated Mining Co., Laurium Mining Co., LaSalle Copper Co., Isle Royale Copper Co., Superior Copper Co., St. Louis Copper Co., and Centennial Copper Mining Co.

F. W. Denton, general manager of the Baltic Mining Co., Champion Copper Co., and Trimountain Mining Co.
Charles L. Lawton, general manager Quincy Mining Co.
Theodore Dengler, agent of the Wolverine Copper Mining Co. and Mohawk Mining Co.
R. M. Edwards, president and general manager of the Franklin Mining Co., Indiana Mining Co., North Lake Mining Co., Algomah Mining Co., and general manager of South Lake Mining Co.
J. L. Harris, general manager of the Hancock Consolidated Mining Co. and Oneco Copper Mining Co.
R. R. Seeber, superintendent of the Winona Mining Co. and Houghton Copper Co.

Judge Murphy made his report to Gov. Ferris on July 26, and on the next day gave out for publication the following statement:

One of the duties given me by the governor was to offer my services in mediation in an effort to learn what concessions, if any, the employers would make. I put to them a question which eliminated the employees' demand for recognition of the Western Federation of Miners. I did so, because I am satisfied that the employers will not recognize the federation, whatever be the cost to themselves, their employees, and the whole community. With the obstacle of recognition removed, I wanted to see what the employers were willing to do. With that I learned it could then be ascertained what concessions the employees would make. The controversy would thus be narrowed to its smallest compass. Eliminating recognition of the federation, the question asked upon what terms the strikers would be reemployed.

The answer of the employers has now been made public. There are two outstanding features in it which in my judgment are unreasonable and arbitrary. A conference with the mine managers was had after the receipt of this answer. They adhere unalterably to it. I could not, with self-respect, propose these terms to the employees, for no self-respecting striker could submit to the two conditions I refer to.

The employers insist on refusing in their individual discretion reemployment to any striker who has engaged "in acts of agitation," or who has "incited thereto." To agitate for improved conditions, to agitate for the right of employees to organize, to agitate for any legitimate end is the right of every citizen. To penalize the exercise of that right by refusing employment throughout the copper country to any striker is to put him and his family upon that community practically without employment. It is wrong fundamentally and wholly wrong in principle. In policy nothing so much reminds me of it as the obtuse course of the Bourbons. It would put the strikers who return to work in the position of sacrificing their fellows who had been loyal in a common cause.

The position of the employers that withdrawal from the membership in the federation must be a condition precedent to reemployment is equally arbitrary and untenable. In principle, if the employer can do this, he can, with like propriety, compel withdrawal from any political, religious, or social body as a condition of employment. It is basically un-American. In this tense situation, where power should be used generously and gently, it is a policy which will set men's teeth, evoke in the striker the spirit of loyalty and sacrifice, and make them ready to suffer desperate hardships before acknowledging any such right in the employer.

The respective contentions concerning wages, hours, and other conditions of labor are attended by many considerations and by different factors in different mines. We are prone, I think, in the lower peninsula, to identify the copper country with the Calumet & Hecla only. True, it and its 12 subsidiary companies dominate the situation. But there are 15 other mining companies. Some of them have been operating for years without paying a dividend. Some have been calling upon their stockholders for from $80,000 to $100,000 a year in assessments to keep them running, in the hope that a profitable mine will be developed. And while at least a living wage may rightly be demanded from all mine operators, there are many conditions to be studied in working out just conclusions upon the questions of hours and wages.

I believe there are real grievances, at least upon the part of the trammers. They fill and move for distances varying from 50 to 1,500 and even, at places, 2,000 feet, a car which empty weighs 1,900 pounds and which carries 2$\frac{3}{10}$ tons

of rock. In the mines of South Africa this work is done by electric haulage. These trammers complain so generally of the treatment they receive from their bosses that I think a foundation for the complaints must exist. Nor do I believe that they have had opportunity in the past, without incurring the penalty of added difficulties and even discharges, to appeal from the boss to a higher authority for redress.

The time consumed by all underground men in getting to the levels below and returning to the surface at the close of work is borne by the employees. In the Butte (Mont.) district this is divided, the workmen going down on their own time and coming up on the company's time.

The one-man drill, of which there are now 400 in the Calumet & Hecla mine, has, I believe, like all labor-saving devices, come to stay. Its installation should be, if it has not been, accompanied by equitable conditions as to pay and safe conditions of operation.

I speak of the foregoing as indicating the real need of improvement in some conditions. To arrive at just conclusions on all the matters in dispute would involve full inquiry in the presence of, and with the cross-examination of, both employers and employees.

What should the State do? It is maintaining troops in the strike region at great expense. Many of Michigan's manufacturers are directly interested as consumers of copper.

The Commonwealth, as the organ of society at large, is directly concerned not only with the industrial but with the social and economical welfare of all the parties in interest—the men, the women, and the children of the Keweenaw Peninsula.

Yet the State is compelled to look on, with the contending forces at arm's length, with no ample authority to take care of its interests. Just what the State can do and should do in such a situation calls for careful study. It should not be done in a haphazard way.

The Canadian act, which provides a board of investigation and conciliation for industrial disputes in which is involved any public necessity, whether an article of commerce or a public utility, points a way. In Canada a board composed of three members—one appointed by each of the contending parties, and a chairman selected by both—is delegated to investigate. It has the full power of a court of record to compel the testimony of witnesses and the production of papers. A lockout or a strike must be suspended when contemplated until the board completes its hearing and makes its formal finding. Its report is not binding upon the parties. Its only appeal is to public opinion. But it is an appeal made after full inquiry and with an effort at impartiality. After the report, if desired, the lockout or strike may go into effect notwithstanding the finding. From March, 1907, to March, 1913, the act was invoked 145 times, and there were only 18 strikes during that period.

The State should at least have the power to bring the parties in for full examination. The State, as the ancient phrase has it, is parens patriæ—the father of the country. For its own welfare and protection, and because of the social obligations it owes its people, it must devise a way of fulfilling that duty. But this calls for no hasty, ill-considered legislative program. It requires careful research and sound judgment.

That the duty which the State also owes its people to protect life and property still requires the presence of troops can not be doubted by anyone who will make impartial inquiry into existing conditions. The troops are being gradually reduced, and the governor, upon the information given him, will continue this policy. The time is not yet here when they may be wholly withdrawn.

A dispatch from Big Rapids, Mich., the home of Gov. Ferris, dated August 26, and published in the Houghton and Calumet Daily Mining Gazette, said that, after his conference with Judge Murphy, the governor said:

Judge Murphy's mission has been accomplished to my entire satisfaction. My talk with him merely strengthens my prior convictions. I do not hesitate to say that the men have real grievances. By this I do not want to be understood as taking the position that they are right in all their contentions and should have all the concessions they demand, but they are entitled to some of the things they ask, and this fact, in my opinion, makes the position taken by the operators seem arrogant and unfair.

You can say for me that as long as the presence of the soldiers in the copper country is necessary to afford any man who desires it protection for life and property they will remain on the job.

On September 4 Charles H. Moyer, president of the Western Federation of Miners, and Clarence Darrow, of Chicago, one of the federation's legal advisers, called on Gov. Ferris at Lansing and urged that he again endeavor to settle the strike by arbitration. Following is a copy of a letter written by President Moyer from Chicago on the same day and a copy of the governor's reply:

CHICAGO, *September 4, 1913.*

Mr. WOODRIDGE N. FERRIS,
Governor of Michigan, State Capitol Building, Lansing, Mich.

DEAR SIR: Per your request, I hereby submit in writing the terms of settlement agreeable to the striking miners of the copper district in the State of Michigan.

First. The employer shall agree that all men who went on strike shall be reinstated in their former positions.

Second. The right of the employees to join any society, association, or organization shall be conceded by the employers. This being agreed to by the employers, the employees agree to submit all other questions in dispute, including hours, wages, and the one-man machine, to a board of arbitration, said board to be created as follows: Employers to select two members, the employees two, and the governor of the State of Michigan to act as the fifth member of the board, both parties at interest to be bound by the findings of the board.

Respectfully submitted.

CHARLES H. MOYER
(In behalf of the employees),
President Western Federation of Miners.

STATE OF MICHIGAN, EXECUTIVE CHAMBERS,
Lansing, September 5, 1913.

MY DEAR SIR: I have your communication of September 4, also one from Mr. Clarence Darrow, of Chicago, bearing the same date. I thank you for this communication. Rest assured that I shall continue to do everything in my power to bring about a settlement of this strike whereby justice will be the dominating factor.

I wish to assure you that I have done everything within my capacity to bring about a just settlement of this strike. My regret is that the very men I have pleaded for during the past 25 years should utterly misunderstand my attitude. I care nothing about this, provided the strike has a righteous conclusion.

Very sincerely, yours,

WOODBRIDGE N. FERRIS, *Governor.*

Mr. CHARLES H. MOYER,
President Western Federation of Miners, Calumet, Mich.

A dispatch from Lansing, dated September 15 and published in the Hancock Evening Journal of that date, said:

Gov. Ferris to-day received notice that another attempt to bring a settlement of the copper strike had failed. He received the following telegram from Allen F. Rees, of Houghton, attorney for the mine managers:

"We can not act along the lines of your telegram, because conditions seem to make it impossible."

The telegram referred to by Rees contained a plan of arbitration proposed by Chairman Hemans, of the State railroad commission, and embodied the withdrawal of the Western Federation of Miners from the controversy.

During September Gov. Ferris was urged to call an extra session of the legislature to enact measures which would provide for arbitration or for improved conditions in the mining districts. Among measures which he was asked by various persons to recommend were:

1. The enactment of a law reestablishing a State board of arbitration.

2. The enactment of an eight-hour law for men working underground, similar to such laws in Arizona, California, Colorado, Idaho, Missouri, Montana, Nevada, Oklahoma, Oregon, Utah, Washington, and Wyoming.

3. The enactment of a law which would prohibit sheriffs from bringing men from other States into their counties to act as "aids."

4. The enactment of a law which would change the burden of paying the expense of the militia, when called out on strike duty, from the State treasury to the treasury of the county where the militia should be sent.

5. The enactment of a law which would impose a tonnage tax on the production of the mineral mines of the State.

Gov. Ferris issued a letter to all the members of the legislature asking for their advice as to calling an extra session, and a large majority advised against it. He then abandoned the idea.

The Houghton and Calumet Daily Mining Gazette of September 11 said that Claude O. Taylor, president of the Michigan Federation of Labor, who had been in the copper district several days, and who had conferred with officers of the Western Federation of Miners, would call upon James MacNaughton, general manager of the Calumet & Hecla Mining Co., and lay before him another plan for arbitrating the strike. The Gazette further said:

> The plan is practically the same as those already submitted to the corporations by Gov. Ferris, Clarence Darrow, and others, excepting that the labor people are willing to arbitrate the question as to whether or not the corporations shall recognize the right of the men to organize local unions not affiliated with the federation.
>
> It is proposed to have the arbitration committee made up of seven men, three to be appointed by the strikers, three by the mining companies, and the seventh by these six. The strikers' three delegates are to be local men who are not officials of the federation of miners.

On September 11, Mr. Taylor called at the Calumet & Hecla offices, but the general manager refused to meet him.

At a regular semiweekly meeting of the mine managers, held at the Houghton Club on September 17, John A. Moffitt, special representative of the United States Department of Labor, presented the two following propositions:

HOUGHTON, MICH., *September 17, 1913.*

To the managers of the mines in the copper district of Michigan.

GENTLEMEN: As special representative of the United States Department of Labor, I offer for your immediate consideration the good offices of the department in bringing about an adjustment of the existing strike of the mine workers. These good offices of the department are offered to you, collectively or separately, for the purpose of mediation, conciliation, or arbitration, under existing conditions, preferably the latter, to wit:

First. That all the issues involved in the strike shall be settled by arbitration.

Second. That the board of arbitration shall be composed of five members.

Third. That two of the members shall be selected by the mine managers.

Fourth. That two of the members shall be chosen by the mine workers now on strike.

Fifth. That the latter two members shall not be members of the Western Federation of Miners.

Sixth. That the latter two members shall be selected at a meeting which all mine workers now on strike shall be invited to attend.

Seventh. That the fifth member shall be designated by the United States Secretary of Labor.

Eighth. That the decision of this board of arbitration shall be binding on both the managers and the mine workers now on strike.

If this proposal as a whole is not acceptable to you, I request that you indicate what part of the proposition is objectionable.

Respectfully submitted.

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

HOUGHTON, MICH., *September 17, 1913.*

To the managers of the mines in the copper district of Michigan.

GENTLEMEN: With the view of adjusting amicably the differences between you and your former employees now on strike, I propose to you, collectively or separately, that you discuss these differences with a committee composed of such a number of persons as you may suggest; that these persons shall be members of the Western Federation of Miners, or shall not be members of that organization, as you may prefer, and they shall be chosen at a meeting which all of the mine workers on strike shall be invited to attend.

Respectfully submitted.

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

At this meeting of the mine managers some of them requested Mr. Moffitt to secure from the Western Federation of Labor information as to the number of members of the federation in the Michigan copper district at the time of the referendum vote on calling a strike and the number that voted in favor of striking. To each of the managers Mr. Moffitt sent a letter as follows:

CALUMET, MICH., *September 19, 1913.*

To the managers of the mines in the copper district of Michigan.

GENTLEMEN: In compliance with the request that was made at your meeting in Houghton on the 17th instant, that I should ascertain if possible the number of votes cast by your employees in favor of a strike and the conditions under which the vote was taken, I desire to inform you that, upon investigation at the union headquarters at Calumet and other points, I gathered the following information:

That the executive board of the Federation of Miners was requested by the mine workers of this district to give their approval to holding a referendum vote on two propositions, which was granted, to wit:

A. Asking for a joint conference of the mine managers and the employees.

B. In case a joint conference should be refused, that a strike be called.

After the aforesaid request was granted, meetings of the men were held at their respective places of meeting in this district, and they were notified that on July 1 balloting would begin at the offices of the secretaries at the following places: Calumet, Ahmeek, South Range, Hancock, and Mass City, and that the polls would be open each day until July 12 from 8 o'clock in the morning until 6 o'clock p. m., and all the men were urged to vote.

Notice of said balloting was advertised in the local papers in foreign languages, and committees of the men were also sent to the various localities to remind the men of the referendum. The polls were closed to voting at 12 o'clock noon on July 12, and a canvass of the votes showed that nearly 9,000 votes were cast, and of this number 98 per cent voted in favor of the aforementioned propositions.

Very truly, yours,

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

When Mr. Moffitt presented the propositions for mediation or arbitration to the mine managers on September 17, their attorney, Allan F. Rees, said that these propositions contained "several new elements," and some time would be required to draft a formal reply. By "new elements" he probably referred particularly to the proposal that the two members of the arbitration board chosen by the

strikers should not be members of the Western Federation of Miners, the mining companies having always declared that they would not consent to arbitration by a board on which the federation was represented. He also probably referred to the request that if the arbitration proposition should not be acceptable as a whole the managers should indicate what part of the proposition was objectionable.

The reply of the mine managers, dated September 20, refusing to accept the good offices of the United States Department of Labor, did not discuss the propositions in detail, but was only a reiteration of the managers' declaration that "the real issue involved in the strike is recognition of the Western Federation of Miners," and that they were unalterably determined to bring about the "elimination" of that organization in the Michigan copper district. Their reply in full follows:

Hon. JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

DEAR SIR: The undersigned, being managers of the copper mines of the counties of Houghton and Keweenaw, in the State of Michigan, desire to express to you their most sincere appreciation of your offer of the good offices of the Department in bringing about an adjustment of the existing strike involving part of the mine workers of our companies, submitted to us in yours of September 16.

The first offer submitted by you begins with the proposition: "That all of the issues involved in the strike shall be settled by arbitration."

The real issue involved in the strike is recognition of the Western Federation of Miners as an organization entitled to represent, through its officials, the mine workers of the district. This has been publicly announced in speeches and in print by the officials of that organization themselves.

In like offers of mediation made by the governor of Michigan personally and through personal representatives appointed by him and acting by his authority we have heretofore definitely declined to treat with the Western Federation of Miners, either directly or indirectly. This conclusion was arrived at in the first instance because of the past history of the federation in its operations throughout the mining districts of the West; because it was and is our firm conviction that the domination of the employees of the mining companies by that federation would not be to the best interests of our employees themselves; and because the federation was entirely unjustified in attempting to speak as the representatives of our employees for the reason that, according to our best information at the time of the inception of the strike, confirmed by all the information which we have obtained since then, not to exceed 25 per cent of the employees of the companies (and in many instances a much smaller percentage) were members of the organization and the large majority of our employees were not willing to be dominated by that organization.

It should also be recognized that because of the attitude of the officers, leaders, and organizers of the Western Federation toward the mining companies and their officials and employees there could not be a resumption of mutual relations and good will and confidence between employers and employees so long as the employees or any part of them are under the influence or domination of the federation. This should be apparent from the nature of the teachings and utterances of the officers, leaders, and organizers of the federation, as set forth in their published speeches and in their official applications.

LARGE FORCE AT WORK.

All of the larger mines of the district have resumed operations with a large portion of the normal forces of their employees, who are entirely satisfied with conditions. In the case of the Calumet & Hecla, after deducting from the normal force those who are known to have removed from the district by reason of strike conditions or for other reasons, from 80 to 85 per cent of its employees have returned to work and are now engaged in their several occupations. Similar conditions (with varying percentages) exist at the other larger mines of the district which are now in operation.

Under these circumstances it is our judgment that we would be remiss in our duties toward the great majority of our employees if we should take any action which in any manner would recognize the Western Federation of Miners as the representatives of the mine workers or as dictating or dominating the actions of our employees, even to the extent of an arbitration as to their right to recognition or as to any other difference, real or fancied, which the federation may urge.

For these reasons, among many others which might be mentioned, we must adhere to our position that we will in no manner deal with the Western Federation of Miners, either directly, through mediation, arbitration, or in any other way.

The only issue involved at the time the strike was called by the Western Federation of Miners was our refusal to enter into any conference with a committee of representatives of the federation. The only demand that was made was for such a conference, with a statement that if we were not willing to meet the officials of the Western Federation of Miners it would be taken as proof that the situation could not be settled peaceably. We have had no other grievances submitted to us in any way, either officially or otherwise. This was not a grievance of our employees, but was a grievance of the federation represented by their officials and organizers from other States, who are entirely unjustified in making any claims to a right to represent the employees of the mines of this district.

Both of your propositions, as submitted by you, involve arbitration or discussion by or with committees, a part of them to be chosen "by the mine workers now on strike."

The mine workers now on strike are those only who are members of the Western Federation of Miners. As above stated, they constitute but a small part of our employees. No method of choosing or appointing arbitrators or committees by "the mine workers now on strike" could be devised in which such choice will not be the direct choice of the Western Federation of Miners as such, and with that federation we will have no dealings of any kind.

It can not be too definitely understood with relation to the present situation that the mining companies can not and will not in any maner recognize or deal with the Western Federation of Miners. They do not represent our employees, but, on the contrary, under present conditions, they stand between the employers and the employees as the only bar to a satisfactory and amicable adjustment of all existing differences.

Because of this situation and without any lack of full appreciation of the efforts of yourself and the Department of Labor, we feel that it is necessary to say to you that we can not accept any plan of mediation or arbitration between the mine employers and the mine workers on strike, which is but another designation for the Western Federation of Miners.

But we suggest to you in view of the situation as above stated and as it exists in the counties of Houghton and Keweenaw at this date, that if you should use your personal influence and the influence of the Department of Labor to induce the officials, organizers, and leaders of the Western Federation of Miners to come to a full realization of the futility of any attempt to secure recognition in this district or to retain a standing therein which would permit them to remain as a factor of influence among our employees or any portion thereof, and to withdraw themselves and their influence from the present situation and from the district, there would be nothing in the way of an early adjustment of any differences or grievances, if they exist, between the employers and their employees. In this way and in this way only can the present deplorable condition be remedied or adjusted.

Since the inception of the strike it has been stated in published speeches of the officials of the Western Federation of Miners that they demanded an eight-hour day, abolition of the one-man drill, and a minimum wage of $3 per day for all employees. No grievances of that kind were stated or submitted to the companies in any form.

THE EIGHT-HOUR DAY.

As to the working hours, it may be stated to you, as was stated to Judge Murphy, who was here on a similar mission in behalf of the governor of Michigan, that for some time prior to the inception of the strike there had been under consideration by the several companies the institution of an eight-hour day for underground employess so far as that rule could be made practicable. The

present strike situation does not alter the intention of the companies in that regard. It is known to the companies that a large number of their underground employees do not want the eight-hour day, and are opposed to it, but we will state to you that if the eight-hour day for our underground employees is desired by them or a sufficient majority of them, it has been and will continue to be given favorcial publications [favorable consideration].

The one-man drill question is purely and simply a manufactured grievance. We know it to be the fact that those who operate these drills do not want them abolished. The continuation of the mining industry in this district requires the use and application of every modern appliance for the reduction of cost. It is made necessary by the low-copper content of the rock and the expense of deep mining, as compared with higher production of other competing districts. The one-man drill is an economic necessity which has come to stay. The conditions of its use have been prescribed by the legislature and the question of its abolition is one which could not be submitted to arbitrators.

As to the minimum wage question, the conditions at the different mines vary to such a large extent that no scale can be adopted applicable to all the different conditions. This has been impossible in the past and will continue impossible in the future and would be as unfair to the laborers themselves as to the companies.

We greatly regret that the situation is such as to render the plan of arbitration or of conference with a committee or with representatives of the Western Federation of Miners an impossibility to us. With the elimination of that organization, arbitration or mediation would become wholly unnecessary, as we are convinced that there would be no difficulty in adjusting satisfactorily all questions that might arise between our employees and the respective companies by whom they are employed.

Dated at Houghton, Mich., September 20, 1913.

The arbitration plan proposed by Mr. Moffitt was accepted by the three members of the executive board of the Western Federation of Miners, who were then in Calumet. A copy of their acceptance follows:

CALUMET, MICH., *September 17, 1913.*

Mr. JOHN A. MOFFITT,
Special Agent, Department of Labor, City.

HONORED SIR: The striking miners of the copper district of Michigan, through their representatives, gladly accept your good offices in attempting to negotiate a settlement with their employers. They welcome arbitration in the settlement of this dispute, and further consider that your proposed method of constituting the board, eliminating as it does all question of the recognition of the Western Federation of Miners, puts it above any reasonable objection on the part of the employers, while at the same time it meets with our hearty approval, to wit: That all differences shall be settled by a board of arbitration, said board to consist of five members, two of whom shall be chosen by the mine managers involved in the controversy, or whatever numbers may desire a settlement; two to be chosen by the strikers in mass meeting assembled for the purpose, the two so chosen not to be members of the federation; the fifth member of the board to be chosen by Hon. W. B. Wilson, Secretary of the Department of Labor. We shall accept arbitrament of said board in all matters at issue and hope that it will enter on its duties very soon.

Appreciating your efforts in the behalf of industrial peace based on justice, we remain,

Faithfully, yours,

C. E. MAHONEY.
YANCO TERSICH.
GUY E. MILLER.

Though the mine managers refused to accept the propositions for mediation or arbitration submitted by a representative of the Federal Government, they afforded Walter B. Palmer, a special agent of the United States Department of Labor, full opportunity to examine the working conditions underground and on the surface, and gave him and Charles B. Wait, a special agent of the same department, free access to their books to obtain data regarding the earnings

of employees of the mining companies, and a careful examination of the books and pay rolls was made.

On the suggestion of Gov. Woodbridge N. Ferris a movement toward effecting a settlement of the strike was inaugurated by the Copper Country Commercial Club. At a meeting of the executive committee of the club on September 13 a committee was appointed to investigate the working conditions in the mines and to bring about an adjustment of the differences. By a unanimous vote of the executive committee the following preamble and resolutions were adopted:

PURPOSE OF ORGANIZATION.

The Copper Country Commercial Club is an organization of 500 business men and others of Houghton and Keweenaw Counties, whose purposes as stated in the constitution of the club are as follows:

To instill, cultivate, and develop a spirit of civic pride among the people of the copper country and an abiding confidence in the business and future greatness of the locality.

To upbuild, develop, and improve manufacturing, mercantile, agricultural, and other economic conditions.

To cooperate in and centralize all our efforts for general publicity.

To induce people to come to the copper country and make their homes among us; and

To take every possible means to promote the welfare of all of the people of this community.

DAMAGE DONE BY STRIKE.

For upward of seven weeks a condition of affairs has existed and to-day exists in the copper country which is nullifying every effort and every purpose of this organization.

On July 23 the Western Federation of Miners called a general strike of all of its members employed in the mines of this district, and within a few hours, by forcible means and otherwise, every man employed, in or about the mines, whether a member of the federation or not, was deprived of his work, thus throwing out of employment an immense body of men.

RIOT AND BLOODSHED FOLLOW.

From the day of its inception the strike has been attended with rioting and bloodshed. Every day riotous mobs roam through the streets of our communities and are held in check only by the force of the National Guard of the State. Attacks on workingmen are of daily occurrence; our jails are filled with persons awaiting trial for violent acts during the strike; our children daily have before their eyes the spectacle of men acting in absolute disregard of law and order; all of which creates a deplorable and disgraceful condition which should not be tolerated in a civilized community.

The expense already incurred for maintaining the troops and the augmented civil authorities is enormous.

REFUSE TO MEET FEDERATION.

The mine managers have refused to recognize the Western Federation of Miners and have refused to treat with them; mediation and arbitration have been offered from various sources and refused.

The press has been filled with the claims and counterclaims of the opposing parties, none of which has been verified.

Reports of working conditions, wages, and hours of labor in the mines of the copper country have been spread broadcast throughout the land which, if taken for true, are a lasting shame and disgrace to the community.

To avoid above conditions, many of our best people have left the copper country—some permanently, others to await the end of the struggle; business is demoralized; the enormous loss in wages to the men can never be regained; the damage to the copper country in its reputation for prosperity and well-being can not be estimated.

RIGHTS OF THE PUBLIC.

In view of the above, therefore, we believe that the time has come when this organization, whose every purpose is thus being destroyed, should rise up and demand that violence, rioting, and bloodshed must cease in this community, and that the rights of the thousands of people who are not directly involved in this strike must be recognized and respected.

We believe that the Copper Country Commercial Club should, through a committee of its members, conduct an investigation to ascertain the facts and truth as to wages, hours of labor, and working conditions in general in the copper country, and when the truth has been ascertained should publish it to the people of this county, of this State, and of the Nation.

OFFER TO MEDIATE.

We believe that inasmuch as every attempt to bring about a cessation of strike conditions has failed, this organization should, through such committee, offer its services to both employer and employee, so that order may be restored and a resumption of work brought about: It is therefore

Resolved, That the chairman of this meeting be authorized to appoint a committee of three members of the commercial club, which committee is hereby instructed to take every means to carry out the purposes herein mentioned with all possible speed.

That such committee may employ clerical help and incur such expense in connection with their work as may be necessary.

That such committee report the result of its work, and that it be authorized to make such report public by publishing the same in the press of this community and of the State.

THE MEN APPOINTED.

This resolution was adopted by unanimous vote of the executive committee and the following committee was chosen: Henry L. Baer, of Hancock; Edward Ulseth, of Calumet; and John W. Black, of Houghton. This committee will meet to-morrow and take up its work without delay.

It is the intention of the committee to consult with the men and with the mine managers and with all other persons interested in the unfortunate labor situation.

There is every reason for the belief that the committee will be able to use its good offices for the purposes of securing concessions from the mining companies for the men and to influence all parties to the controversy with the end in view of settling the differences and securing a more general resumption of mining operations than is now in vogue.

The executive committee of the commercial club appointed a committee to investigate the strike. It was composed of Henry L. Baer, a wholesale meat merchant of Hancock; Edward Ulseth, a contractor and coal dealer of Calumet; and John W. Black, a contractor of Houghton. This committee opened an office in Calumet and sought information from both the mine managers and the men who were on strike.

The officials of the Western Federation of Miners refused to cooperate with this committee or to furnish it with information, because they considered that the investigation by the commercial club was made on the suggestion of the mining companies and in their interests.

The report of the committee to Gov. Ferris was dated October 8, 1913, approved by the Copper Country Commercial Club on October 10, published in the Houghton and Calumet Daily Mining Gazette of October 14, and republished in an illustrated pamphlet of 85 pages. Sections of the report were republished as an advertisement in the Boston Globe of October 20, making a full page, and

in other Boston newspapers. Following are some of the conclusions which the committee reached, quoted from its report:

Attitude toward organized labor.—During the time that mining operations have been carried on in this district the industry has been singularly free from strike troubles. The entire district has been carried on on the open-shop principle, as nearly as the committee has been able to ascertain. At no time has any part of the district been thoroughly unionized, and at no time during the history of the district has any mining company treated directly with any labor organization. At the same time, men have been employed by the various companies without discrimination on account of union affiliations. At the present time there are employed by the various mining companies on surface, machinists, molders, railway engineers, brakemen, and others who belong to the various unions or labor organizations of their particular crafts. Up to the time of the present strike men were not discriminated against because of their membership in the Western Federation of Miners or any other miners' union, and many men undoubtedly were at work in the district underground who belonged to the Western Federation of Miners. Since the beginning of the present strike, however, every one of the managers of the mining companies operating in the district has announced that hereafter no member of the Western Federation will be employed, and it may be stated at this point that each of the managers of the various companies has also stated, both to this committee and to representatives of the Federal Department of Labor and the governor of the State, that they will under no circumstances recognize in any manner that particular organization.

When requested by this committee to give their reasons for this arbitrary attitude, the mining managers stated as their reason the record of the Western Federation, as they understood it, in other camps previous to the trouble in this district. They pointed out in particular the record of the federation in the strike carried on by it in the Cœur d'Alene district in Idaho in 1894, the strike carried on by it in the Cripple Creek and other mining districts of Colorado from 1894 to 1904, and took the stand that in their refusal to recognize or treat with the federation they were justified by the fact, as stated by them, that every labor dispute in which the Western Federation had taken a part was accompanied by bloodshed and violence. * * *

Blacklists.—The committee has investigated as thoroughly as was possible the question as to whether or not the mining companies in the Michigan district or the mine operators had formed any combination or had acted with any concerted plan previous to the present strike, and from such investigation the committee is convinced that, previous to the present strike, there has been no concerted action or combination among the mine managers or operators at any time until after the strike had commenced. Since the strike has been in progress the committee finds that the mine operators have adopted a uniform policy in regard to the recognition of the Western Federation of Miners and the reemployment of members of that organization.

The committee has also investigated thoroughly the question as to whether or not there existed in the copper district of Michigan a "blacklist" of any kind, and whether discharge from one company would affect the possibility of obtaining reemployment with some other company. On this point the committee finds that, beyond any question, there has never existed, in recent years at least, any agreement of any kind between the various companies, nor has there existed any blacklist of employees. The committee has found, as a matter of fact, that employees discharged by one company have found ready employment with the other companies, and in one instance found that an employee discharged by a mining captain in one shaft of a mine, within a few days was reemployed by a captain of another shaft of the same mine. * * *

Reemployment of labor.—As the district for some time previous to the strike was suffering a shortage of labor, the committee is informed that it will be necessary, in order to bring the number of employees up to the normal force, to give employment to considerable more men than were working on the day before the strike. A few of the companies are at the present time taking into their employment outside labor which is coming into the district. This, however, to a limited extent. For some time previous to the strike there existed a shortage of labor in the copper country. It is estimated from figures obtained at the various mines that they were operating with about 1,500 men short of normal force. In addition to this, it is estimated that when the strike commenced fully 2,000 men left the district, and, therefore, as nearly as the com-

mittee can ascertain from the various mine managers, if the men on strike desire to go back to work, there will be plenty of opportunity for them to obtain their old positions. This statement is made with the reservation, however, that the various managers declare that they will not reemploy certain of their old employees who have taken part in any violence or criminal action during the days of the strike. * * *

The one-man drill.—It is claimed by the Western Federation of Miners and its members that the one-man drill, so-called, has placed a burden upon the miners in the copper mines of Michigan which is not commensurate with the wages paid. In this connection, in order to clarify the situation, it may be stated that drilling originally was done by hand. The purpose of the drill in mining work is to drill holes into which the powder is afterwards charged for blasting. In the early days of mining this work was done by two or more men, one of the men holding the drill while other men acted as strikers. As the mining industry developed, a power drill was introduced which was operated by two men. The introduction of the first power drill operated by two men met with the same resistance which is now being offered to the one-man drill. The claim was made that it would put a great many men out of employment, which same claim is also made at the present time in reference to the one-man drill.

It may be stated generally that in the Lake Superior copper district the average copper contents of the rock decreases with depth. This has been the history of the district, and the cost of mining increases proportionately with depth. As has been shown briefly in this report by tables, the Michigan copper mines are operating with rock carrying lower copper contents than the other copper-mining districts of the United States, and the Michigan copper mines are operating at greater depth and consequently at greater cost than the other copper mines of the United States. In order to compete with the other copper districts of the United States, the above facts have made it absolutely imperative that the mines of Michigan should be operated with the closest economy. * * *

This committee, in order to understand the drill and its workings, inspected the drill at work underground in four of the mines. The members of the committee talked to men operating it. They operated it themselves, they saw the drill taken down and set up. The committee talked to a number of miners who were operating the one-man drill, and in no case found any specific objection to its use. In a few instances the men claimed that it was difficult to set up in some places, but the committee found that it is a practice among the miners for one man to help another whenever necessary. The one-man drill operators interviewed invariably admitted that they are making more money on the one-man drill than they were on the two-man drill, and not in a single instance did the committee find a man that would give up his one-man drill to go back to the two-man drill. The committee found in some cases men who said that two men should be on the drill, but when requested for their reasons and asked of what assistance the second man would be in operating the drill, they were unable to give any, except that the assistance would be given to set up the drill in the morning and to take it out of the way before blasting. The committee on one of its trips underground saw one man set up his drill in nine minutes, but from what the committee has been able to ascertain, the average time required by miners to make their places of work safe by barring down loose rock, preparing the place for the drill, and setting up the drill seems to be about one and one-half hours.

The claim has also been made to the committee that a great many men would be thrown out of work by the adoption of this drill, but mining men and engineers in this particular district claim that the installation of this one-man drill will permit mining companies to work poorer ground than has ever before been handled in the district and that instead of throwing miners out of employment it will create a demand for more miners.

On its trips underground the committee took occasion to ascertain whether or not the mining companies were operating in accordance with the law passed at the recent session of the legislature in reference to the one-man drill, namely, the act providing that men operating these machines should not be stationed more than 150 feet from the place where other employees were at work, and the committee found, as a matter of fact, that the mining companies generally were operating in accordance with this act.

From its investigation the committee has concluded that the one-man drill in this district is an economic necessity and that the mining companies operating in the district will insist on continuing its use. * * *

Minimum wage.—From the tables and information given in the earlier part of this report, showing the varying conditions at the different mines, the contrast in the copper content per ton of rock mined by the different companies, the costs of mining in the different mines, it is apparent that a general minimum scale of wages applied to all of the mines of the Michigan copper district can not be put into effect without working injustice both to the operator and to the employee. The injustice to the operator comes in the fact, as demonstrated, that those companies which are now operating at a loss and those companies which will operate at a loss at the average price of copper will either have to be able to operate at a greater loss or close down their mines. Several of the companies now operating, if the minimum wage demanded by the Western Federation of Miners went into effect, would have to go out of business and cause, of course, the throwing out of employment of a great many men. On the other hand, a uniform scale of wages, doing away with the contract system among the miners and trammers, would work hardship upon a large body of the employees who now earn wages in excess of the scale advocated by the Western Federation of Miners.

The real question, of course, is whether or not the men working in the copper industry of Michigan are being paid an adequate wage for the work which they perform. If a company can not operate and pay its employees a living wage, that company should cease operations.

The contract system.—The contract system which is in vogue in the copper country has existed for a great many years. The chief objection to it is the objection made by some of the men that under the system there are months when they do not obtain enough pay to afford them a living. The committee investigated this feature as fully as it was able to do without having the specific complaints of all of the men before it. The committee investigated all cases presented to it of men who claimed to have worked an entire month on contract without having made adequate wages because of poor ground or hard luck, and found that in some instances the docket or pay check for one month would seem to bear out their claim, but, on taking an average of six months or twelve months, it was invariably found that the average pay made was considerably higher than the one month submitted to the committee. Contracts are let for periods of two or three months by the mines, and whereas in some instances during the first month the pay made by the men was comparatively small, when the three months are taken together and averaged the pay amounts to a considerably higher figure. The advantages of the contract system, as claimed by the mine operators and by many of the men, are that it affords the efficient miner or trammer an opportunity to make good pay and gives him a chance to increase his own efficiency and increase his compensation in proportion thereto.

In examining the pay rolls of the various companies and tabulating the same, the committee found that there was a wide discrepancy in the wages paid to the various classes of labor in the various mines. The wages paid by some of the companies average considerably higher than the wages paid at some of the other mines, one of the reasons for this, of course, being the fact that, as before stated, the richer mines in the district can afford to pay higher wages. Other reasons are the facts that in some of the mines the work is carried on at a greater depth and, in some instances, under more unfavorable conditions than at some of the more shallow mines. The fact that this discrepancy exists also seems to bear out the statement that there has been no combination or concerted action among the various mine managers of the district, and the committee is informed that previous to this report there have been no comparative tables made of the wages paid by the various companies. * * *

Tramming.—The conditions under which trammers work in the various mines differ to a great extent. In some mines where a large amount of rock is to be taken out from one level, it has been possible to install electric tramming, which means that the work of the trammer consists in loading the cars, which are then hauled to the shaft by electric motors. In other mines where only a limited amount of rock is taken out at each level it has been impracticable to establish power tramming and the cars are pushed to the shaft by the trammers. The problem of lightening the work of loading and pushing tram cars has been one that has caused considerable trouble. The average car trammed by two men holds 2½ tons of rock. The distance which it is required that trammers push the car varies, at different levels in the various mines, from 50 feet to distances of fifteen or sixteen hundred feet. The cars are of various types and trammers can be found who insist that each particular kind of car is the best.

All the cars run on steel rails and the levels and the tracks are graded with a down grade toward the shaft in favor of the loaded car. The number of cars required to be taken out by men who work on day's pay varies with the varying conditions and the distances to be trammed.

Loading conditions also vary. In some cases the tram cars are loaded by shoveling from the floor of the drift, in some places they are loaded from chutes, and wherever possible a loading platform or sollar is constructed level with the top of the car so that the work of loading is minimized. In some instances the men push the cars a short distance, from which point the cars are hauled by electric or cable haulage. The tramming is done in many cases by contract, and a comparison of the pay made by trammers working on day's pay with those working on contract shows that contract trammers make by far the biggest wages. At the same time they accomplish more work, and it has been found that the contract trammer who makes the biggest pay is also the best man for the operator. Contract trammers in the mines from which the committee has been able to obtain statistics tram on an average of 21 tons, while trammers working on company account or day's pay average from 12 to 14 tons. * * *

The demand for an eight-hour shift.—The problem of working hours for underground employees in the mines of Michigan seems to be one of the hardest to solve. In other industries where work is performed on surface and is not complicated by the necessity for conveying the men to and from their work the eight-hour proposition is in most instances merely one of dollars and cents. When applied to work underground many complications and problems creep in which make it hard to establish a uniform rule. It is conceded, even by the men who are now out on strike, that underground employees of the mines in Michigan do not actually work more than 8 hours a shift, but it is claimed that the hours from the time the men leave the surface until they are returned to the surface amounts to 10 or more hours out of the day.

In other mining districts where operations are conducted nearer the surface and under totally different conditions it has been found practicable to put into effect a so-called eight-hour shift. In many of these mines the copper deposits lie in the shape of a blanket deposit, and men are lowered to a certain depth in the mine, from which all operations are carried on.

In the Michigan mines the copper deposits lie in a vein dipping from the surface, and operations are carried on at many different levels, necessitating the lowering of men to different distances in the mine and, of course, returning them from different levels. Added to this is the immense depth of Michigan mines as compared to other mines, all of which makes the time of lowering the men to their work and bringing them back to surface probably longer than in any other mining district. There also enters into this problem the necessity for keeping skips, or cars by which rock is hoisted out of the mine, in operation for a long enough period to hoist the rock broken by the miners; in other words, the time taken up in hoisting and lowering men deducts just that much time from the period during which rock can be hoisted.

As a matter of safety, men are lowered in the mine at certain fixed hours in the beginning of the shift and are brought back to surface at certain fixed hours at the end of the shift. During these hours no rock is hoisted. Every precaution is taken by the companies in the hoisting and lowering of men. Special cages are put on for their use, and in some of the mines special cables are used. The cages containing the men, which carry only a limited number (the most lowered at one time being about 30), are run at a moderate rate of speed, which is made necessary by the immense depth of the mines. It should be borne in mind that at some of the deeper workings of the Calumet & Hecla mine the men are lowered on an incline shaft for a distance of a mile and one-half. The length of these shafts makes it imperative that great care should be taken in their upkeep and maintenance, and as an illustration of their care it may be stated that in the Calument & Hecla mine some 300 men are employed solely on shaft work in keeping the shafts in repair and in working condition. * * *

It must be borne in mind that in the deeper mines, although the men quit work underground at about the same time, a great number of them are hoisted to surface at the same shaft and with the same cage, and consequently it is necessary that some of the men wait their turn to get on the cage and be taken to surface, which means that considerable time elapses between the time they stop work and reach the surface over and above the actual time taken to hoist them. Under the system used by most of the mines the men who are lowered

first in the beginning of the shift are given the privilege of coming out first at the end of the shift. * * *

Three shifts.—It is impracticable in the mines of the copper district of Michigan to work three eight-hour shifts, this for various reasons, one reason being the fact that it takes so much time to lower the men to work and to bring them back to surface, another reason being that at the end of the day's work when the miners blast their holes, a period of from one to two hours must elapse before men can work in the same place again because of the gases which are generated by the explosions.

In some of the mining districts of the United States, notably the Butte district, the men work an eight-hour shift, going to their work on their own time, but being brought to the surface on the company's time. In the mines in Michigan no attempt has heretofore been made to inaugurate any kind of an eight-hour shift. * * *

Treatment of men by petty bosses.—In regard to the complaint that was made by some of the men of the treatment by petty bosses, it may be said that this complaint is a general complaint which is bound to exist in any industry which requires the number of petty bosses that are required in the mining industry. It may be taken for granted that no mine manager wants his underbosses to mistreat his men, and the solution of this problem lies in providing an adequate method by which men can present their grievances to the management. It is claimed by some of the men that they dare not make complaints against a petty boss without incurring the displeasure of that boss and running the chance of losing their jobs. It is undoubtedly true that some of the bosses who are promoted from the ranks are not competent to handle the men under them. It is undoubtedly also true that many of the complaints that are now heard against underbosses arise out of feelings of jealousy and personal grudge, and can not be adjusted in a general way, but can only be taken up in individual cases and sifted to find the truth. The committee believes that all of the mine managers of the copper district would willingly adjust any legitimate complaint against any of the minor bosses if brought to their attention.

Access to management.—As to the presentation of grievances, the committee finds the fact to be that many of the men feel they have no way of getting to the men in authority who could adjust their grievances. This problem is one largely of reassuring men of the fact that they may go freely to their employers and present their grievances and troubles without incurring discrimination. Heretofore in the district this has been accomplished at times by committees in the case of general grievances, and at times by the individual making a personal visit to the man in authority. The committee has tried to ascertain whether or not any mining company has discriminated against any man or has discharged him for making complaints, and has been unable to find one case where that has been done. Nevertheless, the fact remains that many of the men do not feel free to go to their employers with their grievances. The committee also has been unable to find a single case where any empolyer, mine manager, or person in authority has refused to meet with any man or with any committee of the men to discuss the grievances and problems arising during the course of the work. If some method could be adopted by which the men could be assured that they might come freely to their employers and tell their troubles and present their grievances without incurring any displeasure or discrimination, the problem of presentation of grievances would be solved.

Conclusion.—Undoubtedly, by withholding this report for some future time, the committee would be enabled to embody much valuable information and data which is not at hand at the present, but it is felt that the publication of the report at this time, giving the facts as the committee has found them, may help to clear away many of the false issues that have been raised and may do something toward bringing to a termination the unfortunate state of affairs existing in the copper country.

The committee has come to the conclusion that:

1. The mine managers will not recognize the Western Federation of Miners.
2. No minimum wage applicable to all mines in the district can be established with justice to all parties concerned.
3. The one-man drill has come to stay.

The committee has also concluded:

1. That the question of establishing some kind of an eight-hour working day ought to receive the serious consideration of both men and operators.
2. That some attempt ought to be made to provide an adequate method by which the employee can obtain and have perfectly free access to the manage-

ment for the purpose of presenting grievances without fear of discrimination or discharge.

With these conclusions in mind, the committee decided to meet the managers of the various mining companies and put before them its findings relative to an eight-hour shift and the presentation of grievances, with the hope that something might be done to adjust those matters.

At the meeting which was held there were present managers or other representatives of each of the companies mentioned in the report, and the following statement was made to the committee and agreed to by each representative:

1. That, as previously stated, the mining companies had under favorable consideration for some time previous to the strike the establishment of an eight-hour working day for underground employees; that the different conditions at the various mines render it impossible to work out an absolutely uniform working-day for all underground employees at all of the mines; that each management will work the problem out with reference to its own peculiar conditions; that this could not be done in a short time; but that each management will establish and have in operation an eight-hour working-day for underground employees on or before January 1, 1914.

2. That the adjustment of grievances ultimately rests with the general manager, superintendent, or man highest in authority at the mine; that, therefore, the solution of the grievance problem lies in providing and maintaining a method of free access between the men and the general manager or official highest in authority at the mine; that, therefore, each manager will set aside a certain fixed day or half day in each week as a day for hearing complaints and grievances; that he will devote such day exclusively to meeting men and hearing complaints; that he will investigate every complaint presented to him and will adjust every legitimate grievance with all possible speed; that he will see to it that no man is discriminated or militated against because of presenting complaints; that he will prepare a notice embodying the above and will distribute it among his employees.

The committee feels that with the inauguration of the above plans there must necessarily come closer acquaintance between employer and employee, from which will result untold good to both parties.

On October 30 the various mining companies issued a public statement to the Copper Country Commercial Club, which reported the agreement for an eight-hour day by January 1, and the plans for hearing grievances, as previously given publicity in the report of the club, and added the following statement:

That on condition of withdrawal from the Western Federation of Miners all former employees will be reemployed without discrimination because of having been a member of that organization, or because of nationality, reserving the right to exercise discretion as to the reemployment of those known to have engaged in lawlessness, intimidation, or inciting thereto. This offer will not be continued for long.

The commercial club, in giving this statement to the public, said:

The Copper Country Commercial Club desires in this way to make known to all interested the present willingness of the companies to take back substantially all of their old employees on these terms. If acted upon quickly the strikers will now have an opportunity for reemployment. All citizens of the community are urged to assist, through this present opportunity, in bringing an end to the strike.

DISCRIMINATION AND ADJUSTMENT OF GRIEVANCES.

Before the strike of 1913 employees of the copper mining companies were seldom asked whether or not they belonged to the Western Federation of Miners, and instances of discrimination against members of the federation were not common. The mine workers made little complaint about such discrimination.

The schedule of inquiries which the companies involved in the strike were requested to answer contained the following inquiries:

1. Have officers or captains of the company ever questioned employees as to whether or not they were members of the Western Federation of Miners?
2. Have employees been discharged or discriminated against because of membership in the federation? If so, state the circumstances.
3. In employing men since the strike began, are they asked whether or not they are members of the federation; and if they are members (*a*) are they reemployed, and (*b*) are they required to withdraw from the federation?
4. How were employees before the strike able to present grievances without incurring discrimination or prejudice?

The answers of the various companies, which follow, were made during August and September, 1913.

Relations with Employees.

No. 1. Calumet & Hecla Mining Co.

1. Yes; in individual cases.
2. Only a few cases of men who have been agitating while in the mine or were openly opposing the Calumet & Hecla Mining Co.
3. We have employed no men since the strike commenced, except men who we knew did not belong to the Western Federation of Miners, and when time comes will insist that applicants, if members, withdraw from the Western Federation of Miners.
4. Our employees have at all times been able to present their grievances as individuals, and have had the right to go to the president of the company if necessary. There is a distinct understanding that an employee who has taken a grievance higher than his immediate superior shall not be discriminated against. In cases where the differences are of a personal nature we have transferred the man to another department.

Nos. 2, 3, and 4. Osceola Consolidated Mining Co., North Kearsarge Mine, and South Kearsarge Mine.

1. No official questioning of employees as to membership in the Western Federation of Miners has been done. Doubtless there have been cases where a foreman has asked men the question to satisfy his own curiosity—not for the purpose of making a record of it.
2. No.
3. Yes. (*a*) Men working for the company before the strike began will be reemployed if they have been guilty of no violent or vicious acts, but (*b*) they will be required to withdraw from the Western Federation of Miners.
4. Individual employees or committees of employees are always at liberty to call upon the officer of this company to present grievances or to make requests; in no case within the knowledge of the writer has any discrimination or prejudice been incurred thereby.

No. 5. Isle Royale Copper Co.

1. No; there has never been any question as to membership in the federation.
2. No; they have not.
3. Nonstrikers were not out of our employ, and therefore not asked. (*a*) Yes. (*b*) Yes; they are required to withdraw from the federation.
4. Our employees came to office in person or their committee, or by mail, and have not been discriminated against.

No. 6. Ahmeek Mining Co.

1. Have never made a practice of asking the men whether or not they were members of the Western Federation of Miners.
2. Have never discriminated against any employee on account of membership in federation.

3. Have not hired anybody since the strike started. When we resume operations we intend to ask every one of whom we are at all doubtful whether they belong or not, and we also will require them to withdraw from the federation.

4. All employees have been told that if they were not satisfied with adjustment from their immediate foreman they could always take it up with the superintendent, who would take it up with the general manager, and no one was ever discriminated or prejudiced against.

NO. 7. TAMARACK MINING CO.

1. Yes.
2. No.
3. (*a*) Yes; (*b*) yes.
4. By personal interviews with superintendent or general manager.

NO. 8. ALLOUEZ MINING CO.

1. No.
2. No.
3. When actual mining operations are resumed, all applicants for work will be asked if they belong to the Western Federation of Miners Union, and if so, required to withdraw from said organization before they are hired.
4. Employees have been repeatedly told that if they had any grievance, real or imaginary, they could take it up with the captain; if his solution of the difficulty was not satisfactory, then to the superintendent, and if still unsatisfactory, to the general superintendent or general manager, and in no case would discrimination or prejudice be shown.

NO. 9. SUPERIOR COPPER CO.

1. No; with the exception of one case where I questioned a man with whom I have been on very good terms.
2. No.
3. Yes. (*a*) ——. (*b*) No; unless they withdraw from the Western Federation of Miners.
4. I have known of no case of discrimination on this account. Minor grievances, such as contract prices, bad conditions underground, incompetent partners, individual cases of injustice, are continually being presented to trammer bosses, shift bosses, and the captain, and any such grievances not satisfactorily adjusted were brought to me as superintendent. The employee still dissatified has always had the right to go over my head and lay his case before the general superintendent or the general manager.

NO. 10. CENTENNIAL COPPER MINING CO.

1. No.
2. No.
3. When actual mining operations are resumed, all applicants for work will be asked if they belong to the Western Federation of Miners Union, and if so, required to withdraw from said organization before they can obtain work.
4. Employees have been told that if they had a grievance, real or imaginary, and were not satisfied with the captain's decision, they could bring it before the superintendent, and if still unsatisfactory, to the general superintendent or general manager, and in no case would prejudice or discrimination be shown.

NO. 11. LA SALLE COPPER CO.

1. The superintendent and the captains have occasionally asked employees as to whether or not they were members of the Western Federation of Miners.
2. No.
3. Men are asked whether or not they are members of the federation when they apply for work since the strike began. If members, they may be reemployed if they are considered desirable, provided that they withdraw from the federation.
4. Employees have always been able to present grievances without incurring discrimination or prejudice by doing so in any honorable way.

NO. 12. LAURIUM MINING CO.

1. Employees have sometimes been questioned as to whether or not they were members of the Western Federation of Miners.
2. No employees have been discharged or discriminated against because of membership in the federation.
3. Applicants for work since the strike began are asked whether or not they are members of the federation. Members may be employed if they are considered desirable, but only on condition that they withdraw from the federation.
4. Employees have always been able to present grievances without incurring discrimination or prejudice by doing so in any honorable way.

NOS. 13, 14, AND 15. BALTIC MINING CO., TRIMOUNTAIN MINING CO., CHAMPION COPPER CO.

1. The only time questions were asked was after notice from the local of the Western Federation of Miners was received, a full account of which was furnished you in my letter of the 18th instant.
2. Any known organizers of the Western Federation of Miners were discharged when identified. Only four or five such cases occurred previous to the strike.
3. Yes; and they are not employed unless they state that they are no longer members of the Western Federation of Miners and do not propose to have anything more to do with it.
4. Only by speaking of their grievances to their bosses or to the general manager, or by striking.

NO. 16. QUINCY MINING CO.

1. No.
2. No.
3. No. The great majority of strikers are Finns, Austrians, and Italians who can not speak English.
4. In any manner they choose.

NO. 17. MOHAWK MINING CO.

1. In conversation with the men the question may have been asked.
2. No.
3. No men have been employed since the strike.
4. By consulting the superintendent.

NO. 18. WOLVERINE COPPER MINING CO.

1. In conversation with the men the question may have been asked.
2. No.
3. None have been employed since the strike.
4. By consulting the superintendent.

NO. 19. FRANKLIN MINING CO.

1. Not to our knowledge.
2. No.
3. No men hired since strike.
4. Each employee has a pay book on which is printed the following: "Communications and complaints must be made to the foreman of your department."

NOS. 20 AND 21. WINONA COPPER CO. AND HOUGHTON COPPER CO.

1. No.
2. No.
3. We have so far not reemployed any men at either the Winona or the Houghton The watchmen, pumpmen, etc., now employed we do not believe are members of the federation.
4. By bringing their grievances either directly to their foreman or to the superintendent.

NO. 22. MASS CONSOLIDATED MINING CO.

1. Not to our knowledge. If they have done so, it is without our knowledge or orders.
2. No.
3. No men have been employed since the strike began.
4. Personally or by means of a committee of their own number.

NO. 23. HANCOCK CONSOLIDATED MINING CO.

1. No.
2. No.
3. Have not employed any new men since strike began. (*a*) Old employees will be reemployed as required, provided they withdraw from federation. (*b*) Yes.
4. As far as we know, employees had no grievances; if they had any, they did not make them known to the officials of the company. The company is now and always has been ever ready to meet its employees relative to any grievances, but as noted, if the employees had any grievances, they did not make them known to the proper officers of the company. If employees had any grievances, they could have in the past and will in the future be able to present them to the proper officers of this company without incurring discrimination or prejudice.

NO. 24. ONECO COPPER MINING CO.

1. No.
2. No.
3. Have not employed any new men since strike began. (*a*) Old employees will be reemployed as required, provided they withdraw from federation. (*b*) Yes.
4. As far as we know, employees had no grievances; if they had any, they did not make them known to the officials of the company. The company is now and always has been ever ready to meet its employees relative to any grievances, but as noted, if the employees had any grievances, they did not make them known known to the proper officers of the company. If employees had any grievances they could have in the past, and will in the future, be able to present them to the officials of this company without incurring discrimination or prejudice.

NO. 25. LAKE COPPER CO.

1. Very rarely.
2. In a very few cases, when men appeared to be trouble makers.
3. None have been employed since the strike.
4. Employees have always had the opportunity of presenting a grievance either singly or in a body to either the foremen or the manager without incurring discrimination.

During the strike all of the companies decided not to reemploy men who were members of the Western Federation of Miners unless they should withdraw from that organization, and all men employed or reemployed were required to promise that they would have no connection with it.

In spite of the replies of the companies that employees before the strike had full opportunities to present their grievances to the higher company officials, it is a fact that many of the mine workers felt that they were unjustly treated by the petty bosses and that it would be useless for them to appeal to the higher officials. Many felt that if they went over the heads of the petty bosses the latter would be prejudiced against them and would give them harder tasks. The petty bosses usually belong to the races whose representatives have been engaged longest in mining in this district. The other mine workers are largely of races whose representatives have more recently come to the district. It is commonly asserted by the mine workers that in assigning working places and fixing wage and contract rates the bosses favor men of their respective races. Probably one reason

why many mine workers who considered that they had a grievance did not appeal to the higher officials was that they could not speak English or could speak it only imperfectly.

The report of the committee appointed by the executive committee of the Copper Country Commercial Club to investigate the strike, approved by the club on October 10, 1913, stated that at a meeting of the managers or representatives of the mining companies each of them had agreed that he would set aside a certain day or half day in each week exclusively for hearing grievances, that he would adjust legitimate grievances as speedily as possible, that he would not discriminate against anyone who might present a grievance, and that he would distribute a notice to this effect among his employees.[1]

CONCESSIONS THE COMPANIES WOULD MAKE.

Miners on day shift work five full shifts from Monday to Friday, inclusive, and half a shift on Saturday, or five and one-half shifts a week. Miners on day shift one week, change to night shift the next week, and those on night shift change to day shift. Miners on night shift work only five shifts a week, from Monday night to Friday night. The shifts of miners, day or night, from Monday to Friday are from 9 to 10 hours, according to the facilities provided for lowering men into or bringing men up from the shaft. On Saturday miners work half a day shift.

Trammers on either day or night shift work five full shifts from Monday to Friday, inclusive, the hours being the same as for miners, but on Saturday the day and night shifts of trammers are from seven to eight hours.

The hours here given for both miners and trammers include the time required to go down and come up, but does not include one hour allowed for luncheon.

Several mine managers have intimated that they would be willing to operate their mines on an eight-hour working basis—that is, eight hours per day for six days a week. R. R. Seeber, superintendent of the Winona Copper Co. and the Houghton Copper Co., stated to an agent of the Bureau of Labor Statistics that he would be glad for miners to work on a schedule of eight hours, and would allow them to go down into the mine or return to the surface on the company's time; that is, one way of the trip being made on the company's time and the other way on the miners' time, as is allowed in Butte, Mont., under contracts that the Western Federation of Miners have with the mine managers there.

F. W. Denton, general manager of the Copper Range Consolidated Co., stated to an agent of the Bureau of Labor Statistics that he believed that the mining companies could afford to make some concessions on working hours, and that he had "always regarded it as ridiculous that hours for all men working underground were not the same."

The reply of the mine managers to Mr. Moffitt, representing the United States Department of Labor, and their reply to Judge Murphy, representing the governor, stated that for some time prior to the inception of the strike the mining companies had considered the

[1] See extract from report of the committee under "Arbitration proposals unavailing," p. 96.

question of reducing the working hours to eight for underground men, as far as the change would be found to be practicable.

The report of the committee appointed by the executive committee of the Copper Country Commercial Club to investigate the strike, approved by the club on October 10, 1913, says that at a meeting of the managers or other representatives of the mining companies each of them had agreed to put in operation an eight-hour working-day for underground employees on or before January 1, 1914, and that each would set aside one day or half a day each week exclusively for hearing grievances.[1]

If the working hours were reduced to eight, the shifts of miners would be but little shortened. This is illustrated by the following table showing the hours a miner works during a fortnight at present, compared with the time he would work on an eight-hour basis:

Hours of miners at present.

	Hrs.	min.
5 days, 9½ hours a day, including time required to descend and ascend, but not including 1 hour for luncheon	47	30
Saturday, including time required to descend and ascend	5	30
5 nights, 9½ hours a night, including time required to go down and come up, but not including 1 hour for luncheon	47	30
Total for 2 weeks	100	30

Hours of miners on 8-hour basis.

	Hrs.	min.
6 days, 8¼ hours a day, including time required either to descend or ascend, but not including 1 hour for luncheon	49	30
6 nights, same	49	30
Total for 2 weeks	99	00

If the working hours were reduced to 8, the shifts of trammers would be shortened about 11 hours in 12 days, as shown by the following table:

Hours of trammers at present.

	Hrs.	min.
5 days, 9½ hours a day, including time required to descend and ascend, but not including 1 hour for luncheon	47	30
5 nights, same	47	30
1 day, Saturday, including time required to descend and ascend, but not includling 1 hour for luncheon	7	30
1 night, Saturday, same	7	30
Total for 2 weeks	110	00

Hours of trammers on 8-hour basis.

	Hrs.	Min.
6 days, 8¼ hours a day, including time required either to descend or ascend, but not including 1 hour for luncheon	49	30
6 nights, same	49	30
Total for 2 weeks	99	00

In the first part of each of these tables an allowance of 30 minutes is made for the trip going down and coming up. In the second part of the tables allowance of 15 minutes is made for the trip one way, as in Butte, where the 8-hour system prevails, the miners make the trip one way on the company's time and one way on their own time.

[1] See extract from report of the committee under "Arbitration proposals unavailing," p. 96.

For two reasons it would be impracticable for the mines to be operated on the basis of three eight-hour shifts a day. One reason is that considerable time is required for the man cages to carry the men down into the shafts (the shafts in Michigan being very deep) and to bring them to the surface. The other reason is that there must be an interval between men ascending and others descending to permit the fumes of powder resulting from the blasting to clear away.

While several of the mine managers who were interviewed by the agent of the Bureau of Labor Statistics said that some concessions might be made as to working hours, they did not talk as if any other concessions could be granted. As a rule the mining companies that pay dividends to their stockholders pay larger wages to their employees than do the nondividend-paying mines. The claim is made by the managers of nondividend-paying mines that they can not afford to pay wages equal to those paid by the dividend-paying mines. This argument was used by James MacNaughton, general manager of the Calumet & Hecla Mining Co., which company pays the highest wages paid to mine workers in the district. The answer of the men is that all of the mining companies should pay fair wages or quit mining. Mining is a business of much uncertainty as to production, and developing a " prospect " is in the nature of a gambling operation. But those who are gambling in " prospects " should themselves stand the expense, and not require their employees to stand part of it by paying them low wages. They would not expect to buy mine machinery and materials for any less than the market rates because their mines are still in the development stage, and there is no better reason why they should expect to employ labor for less wages than are paid by the producing mines. If the " prospects " turn out to be big producers as hoped for, the profits will not be divided with employees in the past, but will go to the owners in the form of dividends. F. W. Denton, general manager of the Copper Range Consolidated Co., stated to an agent of the Bureau that in his opinion mining companies should pay fair wages or quit the business, and he instanced one mine of another company which he said ought to be closed up.

UNDERGROUND CONDITIONS.

The mines in the Michigan copper district are entered by shafts, either incline or vertical. At the top of each shaft is a shaft house which contains a powerful engine. This engine operates a drum on which is wound the cable that is used for lowering empty skips or cars into the mine and for drawing skips loaded with copper-bearing rock to the surface. In the same way, man cages conveying the underground workers are lowered into the mine and hoisted to the surface.

An inclined shaft follows the pitch of the copper lode. At the depth of every 100 or 125 feet drifts or levels are dug from the shaft along the lode in either direction, and from these levels stopes are dug upward from one level to the next one above. A stope is a section of the lode from which the ore is being taken out. Along the levels are laid tracks on which tramcars are pushed by men or drawn by motors or mules. The tramcars are loaded at the stopes

with the copper-bearing rock, and when they reach the shaft the rock is dumped into the skip.

Cutting a drift is called "drifting," and cutting a stope is called "stoping," but the first cut that is made above the drift is called "drift stoping." All of these operations are done by drilling and blasting.

In the Michigan copper district the ore is in either conglomerate or amygdaloid rock. Most of the mines are amygdaloid, and the only conglomerate mines are operated by the Calumet & Hecla Mining Co. A conglomerate mine is one in which the rock consists of rounded and water-worn débris of rock or pebbles, united into a compact mass containing mineral deposits. Amygdaloid means almond shaped, and it is an igneous rock containing almond-shaped nodules in which mineral has been deposited.

In the conglomerate mines it is necessary to use a great deal of heavy timber, which is placed between the floor and roof in the drifts and stopes to prevent the roof from falling in. Amygdaloid is a much stronger rock, and in amygdaloid mines but little timbering is used, and the roof is supported by pillars or sections of the rock which are left undisturbed. In some mines rock walls are built along the sides of the drift. Timbers called "stulls" are placed across the drift on top of the walls, and other timbers called "lagging" are placed lengthwise on the stulls to form the roof.

Following is a brief description of the work that is done by underground men:

Miner.—Bars down loose rock; operates drill machines; charges and fires blasts. The last work done on a shift is blasting. After an interval of two hours a new shift comes on and the first work done by the miner in that shift is to loosen the broken rock resulting from the blast, using a bar for that purpose. Miners work singly or in pairs, according as they use one-man or two-man machines.

Trammer.—Loads tramcars and pushes them to the shaft. Usually there are two men to a car, sometimes three. In some mines the trammers dump the rock from the cars into the skip in which it is hoisted up the shaft to the crusher in the shaft house on the surface. In some mines there are other men who do the dumping, and in some mines the cars are dumped by mechanical tipplers.

Timberman.—Places timbers in shaft, drifts, and stopes to support the roof of the mine.

Laborer.—Drags or picks down the rock from the stopes to the drifts; builds rock walls and fills stopes with poor rock; helps timbermen.

Trackman.—Builds and repairs tramcar tracks.

Boy.—Carries drills; operates small hoists that raise dirt from the bottom of new shafts.

The following table, compiled from data furnished by the mining companies, shows the pitch of the copper-bearing lodes or veins, in degrees with the horizon, the average thickness of the veins, the depths of the shafts, the distances from the shafts to the stopes, and the grades of the drifts or levels:

Mine.	Pitch of vein.	Average thickness of vein.	Depth of shaft.		Distance from shaft to stopes.		Grade of levels.
			On incline.	Vertical.	Shortest.	Longest.	
	Degrees.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Inches per 100 feet.*
Ahmeek	41½	12	2,506	1,723	100	1,045	7½
	41½	12	2,683	1,814			
	35½	12	2,152	1,740			
	35½	12	2,170	1,751			
Allouez	40–41	12	3,486	2,641	427	2,235	10
			3,407½	2,937			
Baltic	70–72	30–35	2,230	2,103	50	1,400	3
			2,630	2,470			
			2,550	2,397			
			1,620	1,520			
Calumet & Hecla	37–38	15	200–8,100	120–4,900	15	1,200	4
		12			75	1,900	6–10
		12			75	1,900	6–10
Centennial	38–39	12–13	3,821	2,383	736	1,653	10
			4,293	2,592			
Champion	70–72	30–35	2,530	2,387	100	2,600	3
			2,495	2,354			
			2,108	1,989			
			2,384	2,249			
Franklin	45	9	3,600	2,546	90	1,200	12
Hancock	38–54	6–7	1,428	1,166	50	1,000	10
				4,000			
Houghton	52	20	620	(1)	(1)	(1)	(1)
Isle Royale	56	8	3,162	2,620	100	1,500	10
			1,939½	1,607			
			1,158½	960			
			1,549	1,284			
Lake	35	40–50	1,666	950	100	650	5
La Salle	44	10	2,146	1,453	75	300	8⅓
			1,770	1,220			
Laurium	43	10	1,650	1,115	(2)	(2)	8⅓
Mass	43	10	1,741	1,136	(1)	(1)	5
			1,656	1,131	400	700	
			1,104	753	200	1,400	
Mohawk	35–40	14	2,379	(1)	50	1,500	5
			2,364	(1)			
			1,476	(1)			
			1,963	(1)			
			1,383	(1)			
			898	(1)			
North Kearsarge	40	12	3,873½	(1)	100	1,600	9
			3,276½	(1)			
			1,449	(1)			
Oneco	35	14	1,250	717	(2)	(2)	10
Osceola	40	10	4,263	(1)	150	2,030	9
			4,609	(1)			
Quincy	52	6	6,597	4,731	(1)	3,000	12
South Kearsarge	40	12	2,820½		110	900	9
			1,992½				
Superior	53	20	1,978	1,600	100	1,100	10
Tamarack	37½	20		3,409	1,100	2,500	10
				4,355			
				[3] 5,253			
				4,450			
				5,308			
Trimountain	70–72	30–35	2,815	2,656	100	1,100	3
			2,335	2,203			
			2,315	2,184			
Winona	68	20	1,272		50	800	7½
			1,406				
Wolverine	40	12	1,700		50	1,400	10
			3,995				
			3,872				

[1] Not reported.
[2] No stoping has been done.
[3] From the 5,223½-foot level an incline shaft extends to an additional depth of 495 feet.

Most of the shafts are inclined and follow the pitch of the vein, which varies from 35° to 72°. There are only a few vertical shafts. As will be seen, there are great differences in the depths of the shafts, and the greatest differences are in the shafts of the Calumet & Hecla Mining Co., which vary from 200 to 8,100 feet on an incline, from 120

to 4,900 feet vertically. Some of the shafts in the Conglomerate lode of the Calumet & Hecla Mining Co. are the deepest shafts in the world.[1]

The distances from the shafts to the stopes vary from 15 feet in one of the Calumet & Hecla shafts to 3,000 feet in one of the Quincy shafts. The grades of the drifts vary from 3 inches in 100 feet in the Baltic, Champion, and Trimountain mines to 12 inches in Franklin and Quincy mines. The grade of the drift is a matter to be considered in connection with the heavy work of tramming by hand-pushed cars. Some of the best mining engineers consider that a grade of 5 inches in 100 feet is best, and that a steeper grade makes too hard the work of pushing the empty tram cars up grade back from the shaft to the stopes.

The following table, compiled from data furnished by the companies, shows the depths of the various shafts, the number of men employed underground, the means of ventilation in the mines, and the sanitary provisions:

Mine.	Depth of shaft on incline.	Number of men underground.	Ventilation of mine.	Sanitary regulations underground.
	Feet.			
Ahmeek	2,506 2,683 2,152 2,170	424	Natural	Men used old workings and sumps as closets, which places are disinfected whenever necessary.
Allouez	3,486 3,407½	305	do	The men being so widely distributed, use is made of stopes, drifts, or abandoned workings; same receive a sprinkling of lime occasionally.
Calumet & Hecla	8,100	2,783	do	Boxes are kept which are either sent to surface or buried in caving stopes.
Centennial	3,821 4,293	148	do	The men being so widely distributed, use is made of old stopes, drifts, or abandoned workings; same occasionally receive a sprinkling of lime.
Copper Range	2,230 2,630 2,550 1,620 2,815 2,335 2,315 2,530 2,495 2,108 2,384	2,207	Natural ventilation regulated by doors and stoppages where draft is too strong or where it is desired to force circulation to other points.	There are no sanitary regulations beyond requiring levels to be cleaned up from time to time.
Franklin	3,600	283	Connections between shafts, raises, and compressed air.	All waste goes into dirt to be hoisted.

[1] *Deep mining.*—There has been much speculation as to the depth to which it will be practicable to push the work of mining. The special difficulties which attend deep mining, in addition to the problems of hoisting ore and raising water from great depths, are the increase of temperature of the rocks and the pressure of the overlying strata. The deepest mine in the world is No. 3 shaft of the Tamarack mine in Houghton County, Mich., which has reached a vertical depth of about 5,200 feet. Three other shafts of the Tamarack Co., and three of the neighboring Calumet & Hecla mine have depths of between 4,000 and 5,000 feet vertical. The Quincy mine, also in Houghton County, has reached a vertical depth of nearly 4,000 feet. In England are several collieries over 3,000 feet, and in Belgium two are nearly 4,000 feet deep. In Austria three shafts in the silver mines at Prizbram [Přibram] have reached the depth of over 1,000 meters. At Bendigo, in Australia, are several shafts between 3,000 and 4,000, and one, the Victoria Quartz mine, 4,300 feet deep. In the Transvaal gold region (South Africa) a number of shafts have been sunk to strike the reef at about 4,000 feet. (Encyclopedia Britannica, eleventh edition, 1911, Vol. XVIII, p. 539.)

Mine.	Depth of shaft on incline.	Number of men underground.	Ventilation of mine.	Sanitary regulations underground.
	Feet.			
Hancock	1,428	117	Natural draft through 2 shafts connected in upper levels and a brattice in the vertical shaft at lower levels. Air drills are used and air blown at the face after each blast. Blasting is done only at end of shift, the period between shifts allowing ample time to clear away practically all fumes and gases.	Small boxes are provided that can be removed frequently, dirt being used to continuously cover contents of box.
Houghton	620	.....	Natural, by connections between shafts and through raises from level to level, also a few other connections to surface.	Excrement is deposited in powder or candle boxes, covered with dirt, and hoisted.
Isle Royale	3,162 1,939½ 1,158½ 1,549	541	Natural	The use of old stopes and boxes, using lime for disinfectant.
Lake	1,666	159	.....do.....	Only such regulations as ordinary common sense would indicate as necessary.
La Salle	2,146 1,770	.....	Natural and artificial. The 2 shafts being connected by a drift on the twelfth level, gives good ventilation. The exhaust from the air-driven drills and pumps is more than sufficient for good conditions. After blasting, powder smoke is blown out by opening valves in the compressed air line.	Empty powder boxes are used as latrines. Lime is furnished, and the fine dirt of the mine is used to dilute and cover the contents of the boxes, which are brought to the surface when filled.
Laurium	1,650	.....	Furnished by exhaust from air-driven drills and pumps.	Do.
Mass	1,741 1,656 1,104	282	Natural, by connections between shafts and through raises from level to level; also a few other connections to surface.	Receptacles are furnished for use of men, and same are brought to surface as necessary.
Mohawk	2,379 2,364 1,476 1,963 1,383 898	608	Natural. Upcast and downcast shaft; shafts all connected.	Pump sumps and abandoned out of the way stopes are used for closets.
North Kearsarge	3,873½ 3,276½ 1,449	272	Each mine has 2 shafts; 1 shaft, by reason of location or on account of having steam pipes at the collar, is maintained as an "upcast" shaft, and the other shafts are "downcast." Ventilation is thus natural and effective.	The old workings are commonly used by the men. At intervals quicklime is scattered in these places. Water-closets are provided adjoining the change houses on surface.
Oneco	1,250	17	Natural, assisted by air from machine drills; air being blown at face of drift after each blast, the 2-hour period between shifts allowing sufficient time to clear out practically all fumes.	Men come to surface when necessary.
Osceola	4,263 4,609	242	Each mine has 2 shafts; 1 shaft, by reason of location or on account of having steam pipes at the collar, is maintained as an "upcast" shaft, and the other shafts are "downcast." Ventilation is thus natural and effective.	The old workings are commonly used by men. At intervals quicklime is scattered in these places. Water-closets are provided adjoining the change houses on surface.

Mine.	Depth of shaft on incline.	Number of men underground.	Ventilation of mine.	Sanitary regulations underground.
	Feet.			
Quincy	6,597	1,456	Natural	Use of quicklime.
South Kearsarge	2,820½ 1,992½	272	Each mine has 2 shafts; 1 shaft, by reason of location or on account of having steam pipes at the collar, is maintained as an "upcast" shaft, and the other shafts are "downcast." Ventilation is thus natural and effective.	The old workings are commonly used by the men. At intervals quicklime is scattered in these places. Water-closets are provided adjoining the change-houses on surface.
Superior	1,978	182	2 shafts connected underground by a level. The main working shaft is upcast. There are valves in the compressed air line at all working places, and free use is made of the compressed air to blow out the gas in addition to that exhausted by machines. Compresses are continually working between shifts for the purpose of blowing out foul air and gas.	The men go into old workings, or in places where men are bunched. Boxes and lime are furnished.
Tamarack	[1] 3,409 [1] 4,355 [2] [1] 5,253 [1] 4,450 [1] 5,308	476	Natural	Barrels are provided as closets, with lime to disinfect.
Winona	1,272 1,406	296	Natural. Some ventilating doors are placed in various levels to regulate the air flow to a certain extent.	Excrement is deposited in powder or candle boxes, covered with dirt, and hoisted.
Wolverine	1,700 3,995 3,872	361	Natural, due to difference in elevation of shaft collars, and exhaust air from drills and pumps.	Pump sumps and abandoned out of the way stopes are used for closets.

[1] Depth of shaft, vertical feet.
[2] From the 5,223½-foot level an incline shaft extends to an additional depth of 495 feet.

The mine managers seem to consider that the mines are sufficiently ventilated, but the mine workers allege the contrary and complain about the poor air they are compelled to breathe from 10 to 11 hours a day. The oxygen is consumed not only by the lungs, but by the open lights which underground men carry. Air enters the mine by the shaft, and if there are two or more shafts and they are connected on some levels, the air is supposed to form a current from one to the other. In some mines also there are raises, or openings, between the levels, to give additional circulation to the air.

There are no fans for blowing fresh air into the mines, as there are in coal mines, and the managers allege that fans are not necessary, as there are no gases in copper mines. Though the shafts are in many cases half a mile deep on incline—in some cases a mile deep, and in one case a mile and a half—there is no means of artificial ventilation except the leakage from the compressed air piped from the surface to operate the drills and the pumps, though at the end of a blast the valves of the compressed-air pipes are opened to blow away the powder smoke.

The sanitary arrangements are nearly as crude as they possibly could be. In some mines powder or candle boxes are used as latrines,

and when filled they are taken to the surface. In some mines dirt is used to cover the contents of the boxes, and in other mines lime is provided for that purpose. In some mines the matter goes into the dirt that is hoisted. In some mines the men are supposed to go to abandoned workings, but often they do not do this on account of the distance. In some mines there are no sanitary regulations beyond requiring levels to be cleaned up occasionally.

A paper on "Mine sanitation," by E. B. Wilson, was distributed in printed form at the annual meeting of the Lake Superior Mining Institute, held at Houghton, Mich., in 1912, and was reprinted in the proceedings of the institute.[1] From this paper the following is quoted:

> Dr. B. W. Jones,[2] in his paper on the "Importance of the ordinary prevention of water-borne diseases in mines," showed that typhoid fever, tapeworm, and hookworm could be contracted by drinking impure water in mines. Germs of disease and the infectious parasites are transmitted from one person to another in many ways, but chiefly through the air and through water. In every metal mine employing over 25 men arrangements should be made for evacuation. Latrines should be provided, but if they are not kept clean the conditions may become almost as bad as if there were none. Sheet-iron cans or boxes should be arranged for receivers, and into these dry sawdust and ashes should be sprinkled to act as deodorizers. Chloride of lime is not considered a suitable deodorizer for underground. These cans and boxes should be provided with covers, taken to the surface, cleaned, and returned daily. The roof and sides of the places should be kept fresh with whitewash, the floor cemented and sloped, so that it may be washed and not collect any filth. For privacy, portable screens might be arranged.
>
> * * * * * * *
>
> The hookworm is present in the Cornish tin mines in the Camborne district, England, and has been for some years. It is becoming almost general in the southern coal mines of the United States, and it is almost sure to enter our deep northern ore mines unless each operator uses great care to prevent it. Mines which become infected require the most drastic and expensive measures for universal extermination of the pest. In fact, complete eradication does not yet appear to have ever been accomplished.

All of the amygdaloid mines are comfortably cool, with temperatures varying from 50 to 75° F. The amygdaloid rock is much cooler than the conglomerate rock, and the rock in many amygdaloid mines is damp from water seepage. The only high temperatures are in the conglomerate lodes of the Calumet & Hecla Mining Co. The company reports the highest temperature in the deepest of these lodes to be 85° F. The miners, however, claim that on the lower levels of the mines, one of which is 8,100 feet deep on the incline, the temperature is always above 90°, and that on account of the heat their trousers are the only garments they can wear with any degree of comfort. As no work was done during the strike on the lower levels, these statements could not be verified.

In the Franklin and Quincy mines underground men are furnished with drinking water from water mains. In the Lake mine drinking water is caught from small streams in the rock. In the Calumet & Hecla, Tamarack, Allouez, Isle Royale, Hancock, and Oneco mines the men are furnished with water that is brought underground in cans, jugs, or kegs. In all the other mines there is no provision for supplying underground men with water, and the mine managers seem to think that no water is needed by the men except what they can carry in the bottoms of their dinner pails. Many of the men bring tea or coffee instead of water in the pails.

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[1] Vol. XVII of the Proceedings, pp. 117–126.
[2] Lake Superior Mining Institute Proceedings, Vol. XII, p. 105.

ACCIDENTS IN AND ABOUT THE MINES.

A bulletin on "Metal-Mine Accidents in the United States during the Calendar Year 1911," by Albert H. Fay, shows that in 1911 the number of men killed in and about the metal mines averaged 4.19 per 1,000 men employed. It also shows that the fatalities averaged more in copper mines than in any other kind of metal mines. The fatalities averaged 5.33 per 1,000 men employed in or about copper mines, 4.29 in iron mines, 3.43 in lead and zinc mines, 3.95 in gold and miscellaneous metal mines, 1.66 in miscellaneous mineral mines.[1]

The number of men killed in or about the copper mines of Michigan averaged 4.94 per 1,000 employed in or about the mines, a lower average than in any State except California. The average number of men seriously injured in Michigan copper mines was 54.88 per 1,000 men, or larger than in any State except a number of eastern and southern States that are grouped together. The causes of death or injury as shown by the same bulletin (pp. 17–21) were as follows:

Table showing number of men killed or injured in and about copper mines in Michigan, 1911.

[U. S. Bureau of Mines: Metal-Mine Accidents in the United States during Calendar Year 1911. Washington, 1913. Technical Paper 40.]

Cause of injury or death.	Number killed.	Number seriously injured.	Number slightly injured.	Total.
Underground:				
1. By fall of rock or ore from roof or wall	28	236	979	1,243
2. By timber or hand tools	3	32	297	332
3. By explosives	5	4	22	31
4. By haulage accidents	2	193	1,146	1,341
5. By falling down chute, winze, raise, or stope	1	22	254	277
6. By run of ore from chute or pocket	4	27	359	390
7. By drilling accidents	.....	75	331	406
8. By electricity (shock or burns)	1	.....	2	3
9. By machinery (other than mine locomotives or machine drills)	3	27	229	259
10. By mine fires	.....	.....	.....	.....
11. By suffocation from natural gas	.....	.....	.....	.....
12. By inrush of water	.....	.....	.....	.....
13. By other causes	.....	27	317	344
Total underground	47	643	3,936	4,626
Shaft:				
1. By falling down shaft	9	5	3	17
2. By objects falling down shaft	1	4	15	20
3. By breaking of cables	.....	1	3	4
4. By overwinding	.....	.....	.....	.....
5. By other causes	2	3	17	22
Total shaft accidents	12	13	38	63

[1] P. 13. This bulletin is Technical Paper 40, issued by the Bureau of Mines, Department of the Interior. It apparently shows that during 1911 there were in proportion to the number of employees in and about the mines more fatal accidents in metal mines than in coal mines in the United States, in spite of the fact that "in the metal mines there is an entire absence of the gas or dust explosions" which occur in coal mines. The number of men killed in and about the coal mines during 1911, as stated in this bulletin (p. 5), averaged 3.73 per 1,000 men employed as against 4.19 in metal mines. But this may be explained by the fact that the metal mines are operated many more days during a year than are coal mines. This bulletin shows the average number of days that the different kinds of metal mines in the United States were operated during 1911—copper mines, 308 days (p. 21); iron mines, 277 (p. 26); lead and zinc mines, 256 (p. 29); gold and miscellaneous metal mines, 276 (p. 36); all metal and miscellaneous mineral mines, 282 (p. 50). The Production of Coal in 1912, by Edward W. Parker, a bulletin issued by the U. S. Geological Survey, shows (p. 37) that the average number of days that coal mines were operated in 1911 was 220. If the fatal accident rate of coal miners be calculated on the basis of their working 308 instead of 220 days, the rate per 1,000 would be increased from 3.73 to 5.22 as against 5.33, the rate of copper-mine workers working 308 days.

Table showing number of men killed or injured in or about copper mines in Michigan, 1911—Concluded.

Cause of injury or death.	Number killed.	Number seriously injured.	Number slightly injured.	Total.
Surface:				
1. By mine cars and locomotives			3	3
2. By railway cars and locomotives	1	2	2	5
3. By run or fall of ore in or from ore bins		8	46	54
4. By boiler explosions				
5. By electricity (shock or burns)			14	14
6. By machinery		4	28	32
7. By other causes	3	9	193	205
Total surface	4	23	286	313
Grand total	63	679	4,260	5,002

Of the 59 fatal accidents underground, including those that occurred in the shaft, 28 were caused by the fall of rock or ore from the roof or wall. Also the number of persons who were seriously injured and the number who were slightly injured from this cause were very large. Accidents of this kind are largely due to the neglect of miners to bar down all of the rock that is loosened by the blasts before beginning work again in the stopes. Inexperienced miners are often careless about this matter, and, without making a thorough examination of the rock, they begin drilling into it again, with the result sometimes that tons of rock come tumbling down upon them. The danger from falling rock is great in the Michigan copper district on account of the steepness of the stopes, which follow the pitch of the lodes, and which vary from 35 to 72 degrees. In the Copper Range Consolidated mines and other mines that have very steep stopes, the danger is not so great, because as the stopes are dug upward they are filled below with refuse rock, leaving only room enough for the miners to work.

Of the 12 deaths from accidents that occurred in shafts, 9 were from falling down the shaft. The State mining law requires that there shall be railings around the shaft at each level, but on many levels in some mines only chains are hung across the level at the edge of the shaft and they afford inadequate protection.

There is a large number of haulage accidents, but most of them cause but slight injuries, such as bruises, and result from loading, pushing, and dumping tram cars.

In the following table the number of mine workers killed or injured is shown with the average per 1,000 employed:

Number of men employed, days worked, and number of men killed and injured per 1,000 employed in and about copper mines in Michigan, 1911.

[Bureau of Mines: Metal-Mine Accidents in the United States during Calendar Year 1911. Washington, 1913. Technical Paper 40.]

Number of operators reporting	30
Employees:	
Underground	11,953
Surface	4,351
Total	16,304

Number of days worked	5,012,196
Average days worked	307
Number of employees:	
Killed—	
Underground [1]	59
Per 1,000 employed	4.94
Surface	4
Per 1,000 employed	0.92
Total killed	63
Per 1,000 employed	3.80
Seriously injured—	
Underground [1]	656
Per 1,000 employed	54.88
Surface	23
Per 1,000 employed	5.26
Total seriously injured	679
Per 1,000 employed	41.65
Slightly injured—	
Underground [1]	3,974
Per 1,000 employed	332.47
Surface	286
Per 1,000 employed	65.96
Total slightly injured	4,260
Per 1,000 employed	261.28
Widows	31
Orphans	77

The workmen's compensation law of Michigan went into effect on September 1, 1912. All of the mining companies have elected to accept its terms and to pay the prescribed compensation for death or injuries in order to avoid suits for damages. In case of death by accident, the dependents of the deceased person are paid a weekly rate of compensation for 300 weeks, this weekly rate depending on the earnings of the person before death. The following table, which shows the compensation paid by the Calumet & Hecla Mining Co. to dependents of employees who were killed from September 1, 1912, to August 31, 1913, may be examined with interest:

Compensation paid by the Calumet & Hecla Mining Co., under employers' liability act on account of fatal injuries during the year ending August 31, 1913.

Name of employee.	Occupation.	Date of injury.	Date of death.	Weekly rate of compensation.	Total compensation to be paid during 300 weeks.
1. Borchgrevink, Ole	Painter	Sept. 18, 1912	Sept. 18, 1912	$7.62	$2,286
2. Sikanen, Albin	do	do	do	7.36	2,208
3. Destefani, John	Watchman	Oct. 23, 1912	Oct. 23, 1912	[2]	[2]
4. Bliztz, Frank	Sprinkler	Nov. 7, 1912	Nov. 7, 1912	7.35	2,205
5. Krogh, Christian N	Watchman	Jan. 10, 1913	Jan. 10, 1913	7.73	2,319
6. Bradovic, John	Trammer	Jan. 23, 1913	Jan. 23, 1913	7.88	2,364
7. Vidosch, Matt	Miner	Jan. 29, 1913	Jan. 31, 1913	7.54	2,262
8. Krizmanic, Stephen	Company accountant	Apr. 2, 1913	Apr. 2, 1913	7.53	2,259
9. Rom, John	Roller man	Apr. 11, 1913	Apr. 11, 1913	8.14	2,442
10. Orsolano, Anton	Company accountant	Apr. 29, 1913	Apr. 29, 1913	7.24	2,172
11. Bartle, Franklin	do	June 16, 1913	June 16, 1913	7.86	2,358
12. Endahl, Chas. V	do	June 20, 1913	June 20, 1913	10.00	3,000
13. Coppo, Antony	do	June 22, 1913	June 22, 1913	7.19	2,157
14. O'Connor, Martin	Miner	July 3, 1913	July 4, 1913	10.00	3,000
15. Yuntunen, Henry	do	July 19, 1913	July 19, 1913	7.95	2,385

[1] Includes shaft accidents.

[2] No dependents. Paid $200 funeral expense.

HOUSES OCCUPIED BY MINE WORKERS.

All of the Michigan copper-mining companies have built houses to accommodate the mine workers at all of their mines except some small "prospect" mines. At some mines there are not enough houses for all of the employees, and some are obliged to live in houses rented from other owners than the mining companies. At none of the mines are any of the employees compelled to live in company houses.

The dwelling houses owned by the companies are usually substantially built frame houses, and they are usually kept in good repair. The lots on which the houses stand are usually 50 by 100 feet. At only one mine are the lots as narrow as 25 feet. At several mines the lots are 60 or 75 feet wide, and in some cases 100. Some lots are 125 feet deep and some 150 feet.

The following table shows the number of frame houses owned by the various companies and the monthly rental of these houses according to the number of rooms that they contain:

Company.	Number and monthly rental of houses of—														Total number of houses.
	3 rooms.		4 rooms.		5 rooms.		6 rooms.		7 rooms.		8 rooms.		9 rooms and over.		
	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	
Ahmeek			2	$3.50	20	$5.00			1	$4.00					58
			7	4.00					28	6.00					
Allouez			4	4.00	2	4.00	2	$5.00	2	7.00					66
			8	5.00	18	5.00	2	6.00	26	7.50					
					2	6.00									
Calumet & Hecla															[1] 764
Centennial			7	4.00	15	5.00	11	5.00	1	7.00					44
							9	6.00							
							1	6.50							
Copper Range															[2] 607
Franklin	2	$3.00	12	3.00	13	4.00	2	4.00			2	$5.00			50
							19	5.00							
Houghton									1	7.00	1	12.00			2
Isle Royale	10	3.00	3	3.00	3	3.00	8	6.00	2	4.00	1	3.00	1	$10.00	107
			8	4.00	5	4.00			2	5.00	1	5.00			
					22	5.00			26	6.00	2	10.00			
					13	6.00									
Lake															[3] 43
La Salle			2	3.00			3	6.00			1	5.00			6
Mass			1	4.00	1	2.00	1	2.00	1	5.00	1	8.00	2	5.00	35
			1	5.00	17	5.00	1	5.00					1	8.00	
					7	6.00	1	6.00							
Mohawk															[4] 179
North Kearsarge															[5]
Oneco					7	4.00					1	5.00			8
Osceola	3	3.00	29	4.00	129	[6]	65	5.00	41	6.00					[7] 267
Quincy			50	[8]	60	[8]	185	[8]	126	[8]	10	[8]	12	[8]	443
South Kearsarge															[5]
Superior					2	6.00	2	5.00	12	6.00					16
Tamarack			32	4.00	109	5.00	169	6.00	17	7.00					327
Winona	38	3.30	9	3.90	11	4.00	45	5.95	9	7.45	3	15.00			115
Wolverine	1	3.50	2	3.50	4	4.00	3	4.00	2	5.00					87
	4	4.00	1	4.00	1	4.50	1	4.50	1	6.00					
	1	4.50	1	4.50	14	5.00	3	5.00	3	7.00					
	1	5.00	6	5.00	5	6.00	25	6.00							
							1	6.50							
			1	6.00			5	7.00							
							1	7.50							
	60	3.32	136	3.98	291	4.92	380	5.70	175	6.37	13	8.69	4	7.00	3,045

[1] None less than 4 rooms. Average rent, $6.74 per month.
[2] Houses of different sizes ranging from 2 to 12 rooms, rented from $1.50 to $15 per month.
[3] From 3 to 8 rooms, number of each not reported, renting from $2 to $8 per month.
[4] Fifty-three single with 5 and 6 rooms and barn at $5.50 and 63 double with 10 rooms and barn at $5.50 each side.
[5] Included with Osceola.
[6] Rent for $4 and $5.
[7] Including North Kearsarge and South Kearsarge.
[8] Rent according to number of rooms not reported.

As shown by the table, the average monthly rental of the frame houses was—for the three-room houses, $3.32; for the four-room houses, $3.98; for the five-room houses, $4.92; for the six-room houses, $5.70; for the seven-room houses, $6.37; for the eight-room houses, $8.69; and for houses with nine rooms and over, $7. The average monthly rental per room was—for the three-room houses, $1.10; for the four-room houses, $1; for the five-room houses, $0.98; for the six-room houses, $0.95; for the seven-room houses, $0.91; for the eight-room houses, $1.09; and for the houses of nine rooms and over, $0.80.

The following table shows the number of frame houses, owned by the companies, that are supplied with water and sewerage connections:

Company.	Frame dwelling houses owned by companies.			
	Number of frame houses.	Number with faucets in house.	Number with sewerage connections.	Charges for water.
Ahmeek	58	None.	None.	No charge.
Allouez	66	None.	None.	Do.
Calumet & Hecla	764	764	325	Do.
Centennial	44	3	3	Do.
Copper Range	607	607	None.	Do.
Franklin	50	30	8	Do.
Hancock	5	5	5	Do.
Houghton	2	2	1	50 cents per month.
Isle Royale	107	41	38	No charge.
Lake	43	39	9	Do.
La Salle	6	None.	None.	Do.
Laurium	None.			
Mass	35	None.	None.	No charge.
Mohawk	179	None.	None.	Do.
Oneco	8	None.	None.	Do.
Osceola	[1] 267	65	15	50 cents per month.
Quincy	443	[2]	[2]	No charge.
Superior	16	None.	16	Do.
Tamarack	327	220	67	50 cents per month.
Winona	115	103	8	Do.
Wolverine	87	None.	None.	No charge.

[1] Including North Kearsarge and South Kearsarge. [2] Not reported.

Probably in no mining district in the United States is the rent lower than it is in the Michigan copper district for houses rented to employees. The companies do not expect to make any profit on their houses, and the income from house rents is so small that some general managers complain that it is hard for them to get the stockholders of their companies to agree to erect enough houses to provide for all of the employees. The very low rent is an advantage to the employees that are married, and one reason of the companies for making the rents low is to hold the married men. They consider married men to be more reliable than single men, more apt to work regularly, and not so apt to leave the employment of the company to work for another mining company, or to seek employment outside the district. However, single men claim that married men are to some extent compensated for low wages by the low rent, but that low rents are of no benefit to the single men and really is one cause of keeping wages low.

As will be seen by this table, all the frame houses owned by the Calumet & Hecla, Copper Range, Hancock, and Houghton companies are provided with running water, with faucets in the houses; and some of the houses at the Centennial, Franklin, Isle Royale, Lake,

Osceola, Tamarack, and Winona mines are provided with faucets. No charge for water is made by the Calumet & Hecla, Centennial, Copper Range, Franklin, Hancock, Isle Royale, and Lake companies. At the Houghton, Osceola, Tamarack, and Winona mines a charge of 50 cents per month is made for water supplied to each house. The occupants of the houses that are not supplied with running water obtain water from wells, and the number of wells varies from one to each house to one well for five houses.

Electric light is furnished at a cost of from 5 to 12 cents per kilowatt hour for some of the houses at the Calumet & Hecla, Osceola, Ahmeek, Tamarack, Copper Range, Winona, and Houghton mines, and at $2 a month for houses at the Mass mine.

Garbage is removed weekly from the houses of the Calumet & Hecla Co., and biweekly from the houses of the Copper Range Co. Some companies report that garbage is removed when necessary, and others that it is removed annually. No charge for removing garbage is made by any company. The privies of houses which have no sewerage connection are cleaned by the companies without charge. Some companies report that privies are cleaned whenever necessary, others that the cleaning is done annually or every two years. No charge for this is made.

The companies that have built houses during recent years were requested to furnish statements showing the number of houses, the number of rooms in the houses, the cost of construction, and the monthly rentals. The statements received are summarized in the following table:

	4-room houses.			5-room houses.		
	No.	Cost per house.	Rent per house.	No.	Cost per house.	Rent per house.
Osceola Consolidated Mining Co.	7	$818.74	$4.00	.....	.....	.....
Ahmeek	4	715.25	4.00	10	$843.60	$5.00
Do	3	883.85	4.00	10	862.95	5.00
Superior	.....	.....	.....	2	1,000.00	[1] 6.00
Mohawk	.....	.....	.....	126	1,150.00	[2] 5.50
Oneco	.....	.....	.....	7	550.00	[3] 4.00
Average cost and average rent	14	803.12	4.00	155	1,082.68	5.37
Per cent annual rent is of cost	.....	.....	6.00	.....	.....	6.00

	6-room houses.			7-room houses.			Year built.
	No.	Cost per house.	Rent per house.	No.	Cost per house.	Rent per house.	
Osceola Consolidated Mining Co	.....	.....	.....	13	$1,046.14	$6.00	1906
Isle Royale Co	.....	.....	.....	25	1,435.00	6.00	1907
Ahmeek	.....	.....	.....	13	1,111.25	6.00	1904–1907
Do	.....	.....	.....	15	1,160.00	6.00	1904–1907
Tamarack	130	$931.57	[4] $6.00	.....	.....	.....	1897–1900
Allouez	.....	.....	.....	25	1,409.83	7.50	1907
Superior	.....	.....	.....	12	1,450.00	6.00	1910
La Salle	2	1,500.00	6.00	.....	.....	.....	1907
Quincy	30	1,100.00	6.00	.....	.....	.....	1907–8
Mohawk	53	1,050.00	5.50	.....	.....	.....	1899–1907
Franklin	10	620.00	5.00	.....	.....	.....	1899
Oneco	.....	.....	.....	.....	.....	.....	1899
Average cost and average rent	225	973.13	5.84	103	1,300.65	6.36	
Per cent annual rent is of cost	.....	.....	7.20	.....	.....	5.90	

[1] Have basement.
[2] With barn.
[3] One 8-room house, cost $1,000, rents $5.
[4] Water 50 cents per month per family extra.

In the cost reported the value of the land is not included. It appears by the table that the average cost of the houses was for the four-room houses, $803.12, or $200.78 per room; for the five-room houses, $1,082.68, or $216.54 per room; for the six-room houses, $973.13, or $162.19 per room; for the seven-room houses, $1,300.65, or $185.81 per room.

The average monthly rental of these recently constructed houses was for the four-room houses $4, or $1 per room; for the five-room houses $5.37, or $1.07 per room; for the six-room houses $5.85, or $0.97 per room; and for the seven-room houses $6.36, or $0.91 per room.

If the houses are rented during the whole year the average annual rentals amount to 6 per cent of the reported construction cost of the four-room houses, 6 per cent of the five-room houses, 7.2 per cent of the six-room houses, and 5.9 per cent of the seven-room houses. This small income from houses is but little, if any, more than the amount necessary to pay for taxes, insurance, and repairs, and to provide for depreciation.

In addition to the frame houses that are owned by the mining companies and rented by them to their employees, there are at a number of mines log cabins containing from 2 to 10 rooms each. Most of these cabins were built in the early days of mining in the district, but a few have been built within recent years. They were built of hewn logs and have shingle roofs and plank floors. The spaces between the logs are well chinked up and these cabins are about as warm in winter as are the frame houses. However, they have comparatively few windows and the windows are small. The number of these cabins owned by each company and the monthly rentals according to the size of the cabin are shown in the following table:

Log cabins.

Mine.	Number and monthly rental of houses of—												Total number of cabins.
	2 rooms.		3 rooms.		4 rooms.		5 rooms.		6 rooms.		7 rooms and over.		
	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	No.	Rent.	
Adventure	....	.....	2	$2.00	5	$3.00	4	$3.00	....	.....	....	.....	13
	....	.....	....	.....	....	.....	1	3.50	....	.....	....	.....	.....
	....	.....	....	.....	....	.....	1	4.00	....	.....	....	.....	.....
Allouez	....	.....	....	.....	....	.....	4	2.00	3	$4.00	....	.....	17
	....	.....	....	.....	....	.....	10	2.50	....	.....	....	.....	.....
Calumet & Hecla	....	.....	....	.....	....	.....	40	(1)	....	.....	....	.....	40
Centennial	....	.....	....	.....	4	2.50	1	5.00	....	.....	....	.....	5
Copper Range	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Franklin	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	[2] 13
Hancock	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Houghton	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Isle Royale	....	.....	....	.....	11	3.00	....	.....	....	.....	....	.....	11
Lake	2	$1.00	....	.....	....	.....	....	.....	....	.....	....	.....	2
La Salle	....	.....	....	.....	1	(3)	3	3.00	....	.....	....	.....	4
Laurium	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Mass	....	.....	1	(3)	2	2.00	....	.....	....	.....	....	.....	3
Mohawk	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
North Kearsarge	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	(4)
Oneco	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Osceola	....	.....	....	.....	1	3.00	61	(5)	12	4.00	[6] 5	(6)	[7] 79
Quincy	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	[8] 25
South Kearsarge	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	(4)
Superior	....	.....	....	.....	....	.....	....	.....	....	.....	....	.....	None.
Tamarack	....	.....	3	3.00	10	4.00	61	5.00	1	6.00	....	.....	78
Winona	....	.....	5	2.00	....	.....	....	.....	....	.....	....	.....	5
Wolverine	....	.....	1	3.00	....	.....	....	.....	....	.....	....	.....	1
	2	1.00	11	2.36	33	3.18	88	4.39	16	4.13	5	$7.20	296

[1] Rent from $0.50 to $3 per month.
[2] Number of rooms not reported; rent, free.
[3] Rent free.
[4] Included in Osceola.
[5] Rent from $5 to $1 per month.
[6] Three 8-room cabins at $8 per month and two 10-room cabins at $6 per month.
[7] Including North Kearsarge and South Kearsarge.
[8] Four-room and five-room cabins, rent from $1 to $2 per month.

As will be seen, the rent of these cabins is less even than the rent of the frame houses, and for that reason they are in demand by mine workers who wish to economize as closely as possible.

Some of the mine workers that are employed in the mines near Hancock and Houghton own the houses in which they live and the land on which the houses stand. At other mines the companies own all of the ground, and they will not sell any ground to employees or anyone else, even with the mining rights reserved. At some of these mines some of the employees have built their own houses on ground rented from the companies. Each company was requested to state the number of its employees that occupied houses built on ground leased to them, the annual ground rent, and the number that occupied houses built on land that they owned. The statements of the companies are shown in the following table, but the information is not very definite, and there is no information about the number of freeholders:

Mines.	Houses owned by employees.		
	Houses on ground-rent lease.	Annual ground rent.	Number of employees who are freeholders
Ahmeek	None.	.....	[1]
Allouez	15	$5.00	[1]
Calumet & Hecla	[2]1,000	5.00	[1]
Copper Range	144	$5.00–6.00	None.
Centennial	27	5.00	[1]
Franklin	30	5.00	None.
Hancock	2	5.00	None.
Houghton	None.	.....	None.
Isle Royale	None.	.....	[1]
Lake	None.	.....	[1]
La Salle	None.	.....	[1]
Laurium	[1]	[1]	[1]
Mass	None.	.....	[1]
Mohawk	120	6.00	None.
Oneco	None.	.....	None.
Osceola	81	5.00	[1]
Quincy	202	5.00	230
Superior	None.	.....	[1]
Tamarack	30	5.00	[1]
Winona	36	1.00	None.
Wolverine	64	6.00–10.00	None.

[1] Not reported. [2] Estimated.

STIPULATIONS IN LEASES.

The leases of the mining companies for houses rented to their tenants provide that the house shall not be used for any purpose other than a dwelling, boarding or lodging house for employees of the company, that the tenant has no right to possession beyond 15 days after he has quit the employment of the company or been discharged, and that then the company has the right, without notice, to recover possession, and also that for any cause or reason whatsoever the company may, after 15 days' notice, put the tenant out of the house. Following is the principal portion of the house lease of the Calumet & Hecla Mining Co. and its subsidiary companies:

Witnesseth, That said party of the first part hath agreed to let and hereby doth let, and the said party of the second part hath agreed to hire, and hereby doth hire, the following described premises belonging to the party of the first part, and in said county situated, to wit:

.....

To be used and occupied solely for a dwelling house—boarding house for boarding and lodging the employees of the party of the first part by the party of the second part—for which the said party of the second part agrees to pay to said party of the first part ..... dollars per month, for each and every month of such occupation, and a proportional part thereof for any part of a month, payable on the pay day of each month, the first payment to be made on the pay day of ...., A. D. 19... Provided, however, and this lease is upon the following express conditions, to wit: That if the party of the second part shall refuse or neglect to pay the rent above mentioned at the time above mentioned, or shall let, demise, sell, underlet, or assign this lease, or the whole or any part of said premises without the consent of the party of the first part thereto obtained, or shall sell or suffer to be sold in or upon said premises any spirituous or intoxicating liquors,..... or shall refuse or neglect to keep said premises in good preservation (ordinary wear and tear and damages by the elements excepted); or shall continue to occupy or hold, or suffer to be occupied or held, said premises beyond 15 days after said party of the second part ceases to be an employee of the party of the first part, whether because of being discharged by the party of the first part or on voluntarily terminating his relation as employee to the party of the first part; in such and in any such case it is hereby expressly understood and agreed that this lease shall, at the option of the party of the first part, wholly cease and determine, and it shall thereupon be lawful for the party of the first part to reenter into and repossess and recover said premises, and the party of the second part, and any other occupant, to remove and put ont, and in such or in any such case it is expressly agreed that no notice to quit whatever shall be required to be given by the party of the first part to the party of the second part.

It is further agreed that should the said first party wish to terminate the tenancy hereby created, for any cause or reason whatsoever, other than those mentioned in the preceding conditions (although said second party should have fulfilled, performed, and kept each and every condition and covenant hereof), it may do so at any time by giving said second party 15 days' notice of such wish (and such notice shall not be required to terminate at the expiration of any rental period), and at the expiration of such 15 days this lease shall wholly cease and determine, and the party of the first part shall thereupon, and without further or other or different notice, be entitled to immediate possession of said premises, and to recover the same, and the party of the second part, or any other occupant, to remove and put out. The said party of the second part covenants and agrees to keep, perform, and observe each and all of the conditions herein mentioned.

It is further agreed that said first party may retain, out of any moneys due, or to become due, from it to said second party, any rent due or to become due hereunder, and also an amount sufficient to fairly compensate said first party for any injury done, or suffered to be done, to said premises by said second party, contrary to the terms hereof.

The mining companies grant five-year ground-rent leases to employees who wish to build houses to use as dwellings. The ground-rent lease of the Calumet & Hecla Mining Co. and subsidiary companies provides that if the lessee should fail to pay any taxes or assessment, or if he should cease to be an employee of the company by discharge or otherwise, or if, without the written consent of the company, he should sell, assign, or transfer the lease, or sell, assign, lease, or sublet the house he has built on the land, or if he should do several other specified things, the lease shall after 90 days become void, the company shall have the right, without notice, to take full possession of the land and the house thereon built by the lessee; and if the house should not be removed by the lessee within 90 days after reentry it shall fully vest in and become the property of the company, its successors and assigns, without conveyance thereof and without liability to pay for the same or any part thereof.

Following is the principal portion of the ground lease of the Calumet & Hecla Mining Co. and subsidiary companies:

Witnesseth as follows: The said party of the first part in consideration of the rents and covenants hereinafter specified, doth hereby let and lease to the party of the second part the following described piece of land, situate in the township of..... in said county, to wit:.....

(expressly saving, reserving, and excepting, however, to itself, its successors and assigns, all metals and minerals upon said land and the right to enter upon said land to remove the same and the right to dig and mine for the same to within 15 feet of the surface of the rock and to construct and maintain all excavations, pipes, conduits, and other structures upon the demised premises which it may deem necessary for its mining operations upon this or other land, being liable to the party of the second part only for damages actually done thereby) for the term of five years from and after ....., at the rent of ..... dollars per annum, payable annually in advance, to be used and occupied for the sole purpose of erecting and maintaining thereon a ..... single dwelling house and outbuildings only, and for a single family.

Provided, That in case any rent shall be due and unpaid, or the party of the second part shall erect or maintain, or suffer to be erected or maintained, thereon, any other structure or structures than as aforesaid, or shall neglect to pay any tax or assessment, ordinary or extraordinary, levied upon said land, or upon the structure or structures to be erected thereon during the life of this lease, for the space of 60 days after the same shall become due and payable, or shall sell or suffer to be sold, upon said land any spirituous or intoxicating liquors, or shall carry on, or suffer to be carried on upon said land, or in said structure or structures, any business or occupation contrary to law or to good morals, or shall sell, assign or transfer this lease, or sell, assign, lease or sublet the structures upon said land, or any part thereof, without the written consent of the party of the first part, first obtained, or shall continue to occupy or hold, or suffer to be occupied or held, said premises beyond 90 days after said party of the second part ceases to be an employee of the party of the first part, whether because of being discharged by the party of the first part, or on voluntarily terminating his relation as employee to the party of the first part, then and from thenceforth, in such and in any such case, it is hereby expressly understood and agreed that this lease shall at the option of the party of the first part, wholly cease and determine, and it shall thereupon be lawful for the said party of the first part, without notice to the party of the second part, to reenter into and repossess the said lands, and to take full possession of said land, and of such structure or structures, and in such and in any such case, the party of the second part shall have the right to remove from said land any structure or structures he may have erected or maintained thereon for the space of 90 days next after such reentry, and no longer, and all such structures remaining upon said land after the lapse of said 90 days, shall fully vest in, and become the property of the party of the first part, its successors and assigns, without conveyance thereof, and without any liability on the party of the first part, its successors or assigns, to pay for the same or any part thereof.

And the said party of the second part doth hereby hire said piece of land for the term of five years, as above mentioned, and doth covenant and agree to and with the said party of the first part, its successors and assigns, that he will pay therefor ——— dollars per annum, annually in advance, that he will erect and maintain thereon no other structure or structures than as aforesaid; that he will pay, 60 days after the same shall become due and payable, any and all taxes and assessments, ordinary and extraordinary, that may be levied upon said land, or upon the structures thereon, that he will neither sell, nor suffer to be sold upon said land any spirituous or intoxicating liquors; that he will not carry on, nor suffer to be carried on, upon said land or in said structures, any business or occupation contrary to law or to good morals; that he will not sell, assign, or transfer this lease, or sell, assign, lease or sublet the structures upon said land, or any part thereof, without first obtaining the consent of the party of the first part thereto in writing, and in case of breach or nonobservance of any or either of the covenants or conditions above mentioned he will quit and yield up the possession of said land and of such structure or structures, and that such structure or structures shall vest in and become the property of the party of the first part, its successors or assigns, unless the party of the second part shall remove the same from said land within said 90 days.

And the said party of the first part doth agree that the said party of the second part, on paying the aforesaid rent, performing and keeping all the covenants, and observing all the conditions aforesaid, shall and may peaceably and quietly have, hold and enjoy the said premises for the term aforesaid.

It is unnecessary to comment on the drastic nature of the terms of these five-year ground-rent leases, but it seems strange that any person would build a house on land leased on such conditions, and it is most astonishing that 1,000 houses have been built on land so leased from the Calumet & Hecla Mining Co., as estimated by the company, and 153 at subsidiary companies—81 at Osceola, 30 at Tamarack, 27 at Centennial, and 15 at Allouez.

Under the provision that the lease shall terminate when the lessee shall cease to be an employee of the company, by discharge or otherwise, or shall terminate on account of violation of any other stipulation, the only relief that the lessee has is to move his house from the land within 90 days; but this permission to move his house is ineffectual, because the various companies own vast tracts of land and there is no other land near most of the mine locations. Copies of the ground-rent leases of all the mining companies were not secured, but those that were obtained are of much the same tenor as that of the Calumet & Hecla Mining Co. Some of them expressly provide that the company may terminate the lease at any time it desires, and some of them provide that compensation at an appraised valuation shall be paid to the lessee at the termination or cancellation of the lease.

The ground-rent lease of the Trimountain Mining Co. contains the same provisions as the lease of the Calumet & Hecla Mining Co. in regard to the lessee being allowed, on the termination of the lease, to move his house from the land without liability on the part of the company to pay for any improvements, but this lease also contains the following provisions:

And the said party of the second part doth hereby hire said piece of land for the term of ———— years, as above mentioned, and doth covenant and agree to and with the said party of the first part, its successors and assigns, that he will pay therefor ———————— dollars per annum, annually in advance; that he will erect and maintain thereon no other structure or structures than as aforesaid; that he will pay, within 60 days after the same shall become due and payable, any and all taxes and assessments, ordinary and extraordinary, that may be assessed or levied upon said land, or upon the structures thereon; that he will neither sell, nor suffer to be sold upon said land, any spirituous, malt, or intoxicating liquors; that he will not carry on, or suffer to be carried on, upon said land or in said structures, any business or occupation contrary to law or to good morals; that he will not sell, assign, or transfer this lease, nor sell, assign, lease, or sublet said land, or any part thereof, or the structures upon said land, or any part thereof, without first obtaining the consent of the party of the first part thereto in writing, and, in case of breach or nonobservance of any or either of the covenants or conditions above mentioned, and upon notice from said first party, its successors or assigns, that it desires said premises for mining or other purposes, as hereinafter provided, he will quit and yield up the possession of said land and of such structure or structures, and that any and all structure or structures erected by said lessee, his legal representatives or assigns, on said land shall vest in and become the property of the party of the first part, its successors or assigns, unless the party of the second part shall remove the same from said land within said 90 days.

It is expressly agreed by and between the parties hereto that should said first party, its successors or assigns, desire said premises for any purpose or purposes connected with its mining operations and property, it shall have the right to and may cancel this lease by a 30 days' written notice to said lessee, his legal representatives or assigns (if there shall be any under the terms hereof), which said notice may be served by mail by delivery to said lessee, his legal representatives or assigns, personally, or by leaving the same with any person occupying said premises, and in such event this lease and all the obligations, agreements, and covenants of said first party herein contained shall cease and determine immediately after the expiration of 30 days from such service of said notice.

It is hereby mutually agreed and understood that on the expiration of the term of this lease, to wit, said ———— years, if the party of the first part shall, on demand, refuse to renew the same for another term, or when the said party of the second part, having quit or been discharged from the employment of said Trimountain Mining Co., shall, within 90 days next thereafter, have quit said land and the structures thereon and surrendered the same to said company, and in no other case or contingency whatever the structures erected upon said land by said lessee, his legal representatives or assigns, shall be valued and appraised at their then cash value in manner following.

The party of the first part, by its agent or superintendent, shall choose or nominate one person, and the party of the second part one person, to make such appraisal, and in

case of their failure to agree these two shall appoint a third person, in which case a majority of the three shall make such appraisal; and the amount thus ascertained shall thereupon become and be due and payable by the party of the first part to the party of the second part, and on the payment or tender of the amount so ascertained, the full title to such structure or structures shall vest in the party of the first part, its successors or assigns, without other or further conveyance; but on the expiration of the term hereof, in the absence of such demand and refusal, all such structures upon the land shall vest in and become the property of the party of the first part, as above provided, unless the party of the second part shall remove the same within 90 days next after such expiration. This provision as to appraisal and payment of valuation applying only to cases where within the 90 days aforesaid said lessee shall notify said party that he voluntarily surrenders such structures to said first party and request an appraisal as in this paragraph provided, and within the same time appoints and names to said first party the person to act as his appraiser.

The following is quoted from the ground-rent lease of the Champion Copper Co. and the Winona Copper Co., which are identical in form:

It is further expressly agreed that said first party may at any time at its option, upon 90 days' written notice, terminate this lease and purchase said dwelling house or other buildings and appurtenances which may have been erected upon said premises by said second part...., ... heirs or assigns. Notice of the election of said first party to so purchase shall be deposited in the United States mail in the post office at Painesdale, Mich., inclosed in a sealed envelope, with legal postage thereon fully prepaid, addressed to said part... of the second part, ... heirs or assigns, at his, her, their, or any of their last-known place or places of residence; and on the expiration of 90 days after said notice is so deposited as aforesaid in said post office said lease shall thereby be terminated.

Whenever under any of the terms of this lease said first party shall elect to purchase said dwelling house or other buildings and appurtenances which may have been erected upon said premises by said second part...., ... heirs or assigns, it may do so at the value thereof, to be determined by the general manager of said first party and said second part...., or ..... heirs, executors, administrators, or assigns within 10 days from the date of the notice of the election of said first party to purchase; and in case they can not agree upon said value within said 10 days, then they shall, within five days after the lapse of said 10 days, select some competent person to determine the same, who shall determine the same within 10 days after his selection; and in any event in computing said value there shall be deducted by the persons or person determining the same any and all rent then due or to grow due from said second part...., ... heirs or assigns to said first party, and also any bonus paid to said second part.... by said first party, which sum, after making said deductions, shall be paid by said first party to said second part...., ... heirs or assigns, if and when said second part..., ... heirs or assigns shall vacate and surrender said premises to said first party.

And it is expressly understood and agreed by the parties hereto, their respective heirs, executors, administrators, successors, and assigns, that the whole amount of rent reserved and agreed to be paid by said second part.... for said above demised premises, and each and every installment thereof, and any bonus that may have been paid by said first party to said second part...., shall be and are hereby declared to be a valid and first lien upon any and all buildings and improvements that may have been or that may at any time in the future be erected, placed, or put upon said premises by said part.... of second part, ... heirs or assigns, and that whenever and as often as any installment of rent shall become due and remain unpaid for ..... days after the same becomes due and payable said party of the first part, its agent, attorney, successors, or assigns, may sell at public auction, to the highest bidder for cash, after having first given notice of the time and place of such sale by posting up notice thereof in three public places in the township of Adams at least 10 days previous to the time of such sale, all the buildings and improvements on said premises, and as attorney of said part.... of the second part, hereby irrevocably constituted, may make to the purchaser or purchasers thereof a suitable and proper transfer, bill of sale, or other conveyance and out of the proceeds arising from such sale, after first paying the costs and expenses of such sale, including attorney fees, retain to itself, its successors or assigns, the whole amount due on said lease up to the date of said sale for such rent and bonus, rendering the surplus, if any, to the said part.... of the second part, ... heirs, executors, administrators, or assigns, which sale shall be a perpetual bar to and against all rights and equities of said part.... of the second part,..... heirs, executors, administrators, and assigns in and to the property sold.

At the beginning of the strike the mine managers declared that they did not intend to evict the strikers from the houses belonging to the mining companies, but on September 4 the management of the Copper Range Consolidated Co. (which includes the Trimountain, Champion, and Baltic companies) began to serve eviction notices on the tenants in its houses. In some instances the tenants were notified that they must return to work by September 8 or move out of the houses. Some men, who had been leaders in the strike, were not given this alternative, as the company did not wish to employ them again. The eviction was temporarily suspended by a restraining order, issued on September 6 by Judge P. H. O'Brien, of the circuit court, on the petition of the Western Federation of Miners. Two weeks later the Quincy Mining Co. began serving eviction notices.

A number of men in the mining district have during the winter worked for the companies and have during the summer engaged in farming on land leased from the companies. These farm leases are similar in terms to the ground-rent leases. During the strike some of the farmers leasing lands from the companies contributed potatoes and other products to support the strikers. This assistance seems to have been objected to by the companies. The Houghton and Calumet Daily Mining Gazette, a paper that upheld the views of the companies throughout the strike, stated "on good authority" that the companies were determined to drive "this undesirable class from the district" and intimated that the leases of the tenants who were former employees would be canceled and that they would not be paid anything for the houses they had erected or for other improvements they had made. The following was published in the Gazette of October 21:

> The statement was made yesterday on good authority that some of the mining companies that have farms out on lease will cancel the leases of Finnish Socialist farmers. The strike with its attendant crippling of industry, its suffering among the poorer classes, its numerous fatalities, and its riots and general disorders, is laid at the door of the Finnish Socialists. The mining companies are determined to remove this undesirable class from the district. The cancellation of farm leases is one of the means.
>
> This may appear to the uninitiated to be a drastic measure, but the situation is one reflecting no credit on Finnish Socialists. It is estimated there are 500 of these people occupying farms leased from mining companies. They pay $10 to $20 per 40 acres per year—not a very steep rental. The low rental and the probability that they never would be disturbed in their tenure of the lands, because farm lands are of little use to mining company, has made it possible for this class of farmers to prosper. It is now known that they have been assisting in strike agitation; that they have contributed largely to the strike benefits in the way of farm products. Such a class of antagonists naturally is something that the mining companies can not help to foster in justice to themselves.

The following appeared in the Gazette dated October 24:

> Most of the Finn farmers in this vicinity are working land leased from mining corporations. The leases are at nominal figures, usually out of consideration to faithful employees. These Finnish farmers who have been conspicuous in the strike parades and in the strike meetings doing the loudest talking, talking against the corporations, must walk up to the office of these same companies and ask for a renewal of their leases January 1. They are by no means sure they will get it. Some others of the strikers who own houses located on company land are finding out that they have a difficulty to which they gave little consideration. These men, realizing that in the past the company always stood ready to take their houses off their hands at a fair appraised valuation, presumed that unwritten law would always continue. Now they want to move to other camps, being unable to get their jobs back. They want the company to buy their houses. The company is not in the house-buying business right at this moment.

LIVING CONDITIONS.

In the section of the report relating to houses occupied by employees, statistics are given which show that mining companies rent houses to employees at a low rental, and mention is made of the fact that some of the companies supply electric lights for these houses at a cost of from 5 to 12 cents per kilowatt-hour. In statements made by the companies some of them say that they furnish soft coal to employees at from $4.50 to $5.25 per ton, and hard coal at from $7.75 to $8.50 per ton. Following is the price list of coal dealers in Calumet and Laurium:

Price list of coal in Calumet and Laurium on June 1, 1913.

	Per ton.	One-half ton.	One-fourth ton.
HARD COAL.			
Egg	$8.00	$4.25	$2.40
Stove	8.00	4.25	2.40
Chestnut	8.25	4.40	2.45
Stove and nut	8.15	4.35	2.45
(Advance of 25 cents per ton on above sizes Aug. 1.)			
Pea	6.00	3.25	2.00
Screenings	2.00	1.25	.90
SOFT COAL.			
Cannel	7.25	3.85	2.15
Nut cannel	6.25	3.35	1.90
Pocahontas (retail)	6.00	3.25	1.90
Pocahontas (steam trade)	5.50	3.00	1.75
Splint	5.75	3.15	1.85
Pittsburgh	5.50	3.00	1.75
Run of pile (Pittsburgh)	4.50	2.50	1.50
Soft screenings	3.00	1.75	1.15
Smithing	6.75	4.15	2.35

25 cents per ton extra if carried.
All coal must be charged at price in effect at time of delivery regardless of time order is taken.

None of the mining companies conducts a boarding house for its employees, but at most of the mines there are boarding houses conducted by private parties who rent houses from the companies. In these boarding houses the price of board and lodging varies from $20 to $22 per month. Some Italians, Hungarians, and other foreigners live more cheaply than this, by clubbing together, renting a house, buying the provisions, and hiring somebody to cook the food or cooking it themselves.

In this investigation the prices of commodities in stores were not secured, but the prices are not considered dear by the people in the district. Store prices have largely been governed by the prices fixed by the Tamarack Cooperative Association, which has a large department store located at Calumet, and which sells and delivers goods in adjoining villages for a distance of 15 miles or more. It does a larger business than any other cooperative store in the United States. It was organized in 1890, has 1,800 stockholders, and at the end of each fiscal year pays its stockholders a dividend of 8 per cent on their shares of $10 par value each, and pays its customers 12 to 13 per cent on the amounts of their purchases. The following details from the

twenty-second annual statement of the company for the year ending January 15, 1913, show the extent of the business:

Capital stock paid in	$68,180.00
Insurance fund (reserve) on deposit in bank	18,727.87
Total sales from Jan. 15, 1912, to Jan. 15, 1913	845,930.90
Dividend No. 22, payable Feb. 15, 1913	103,947.02
Total dividend since organization	1,144,006.53
Total sales since organization	9,763,330.00
Insurance in force	105,000.00

The Copper Range Consolidated Co. is the only mining company in the district that has company stores. It conducts four stores. The amount of sales of each of them and the amount collected through the company pay office during 1912 are shown by the following figures: Trimountain store—sales, $161,215.32; collected through company, $29,309.81. Atlantic store—sales, $118,555.51; collected through company, $7,735.23. Beacon Hill store—sales, $63,299.13; collected through company, $14,734.19. Redridge store—sales, $49,904.22; collected through company, $15,917.12. No complaints were heard regarding overcharges in these stores.

WELFARE WORK.

The Calumet & Hecla Mining Co., which has a larger number of employees than any other company in the Michigan copper district, has provided a number of welfare agencies for their benefit. The employees of its subsidiary companies also have the privileges of its bathhouse and library.

The Calumet & Hecla Co. has built and now owns 10 school buildings, which are used as public schools, and for which Calumet Township pays rent. It also has built and owns an armory which is used by the local military company, and for which the State pays rent. It has given the ground for the Young Men's Christian Association building in Calumet and for most of the church buildings in the township and has contributed to their support.

Following are replies by the various companies involved in the strike to the requests "Describe welfare agencies of the company and charge to employees for each":

Calumet & Hecla Mining Co.

The Calumet & Hecla Mining Co. maintains the following institutions solely for the welfare of the employees, viz:

PUBLIC LIBRARY.

The public library contains 35,000 volumes, and literature in the various languages which may be of interest to the employees. This library is free to any resident of Calumet Township.

BATHHOUSE.

The company operates a modern bathhouse, built at a cost of $50,000, containing tubs, showers, and a swimming pool 26 by 40 feet. For the use of this bathhouse a charge of 2½ cents is made per bath, except in the case of the women's department, which is free to women and also children, who must be accompained by an adult female attendant. This charge of 2½ cents merely covers the cost of washing the towels and in no way compensates for the operation of the bathhouse proper. This bathhouse is designed in two sections to take care of both men and women of the community.

HOSPITAL.

A company hospital is also maintained, for which a charge of 50 cents per month is made to all single men and $1 per month for married men. This $1 covers medical and surgical attention and all medicines that may be necessary for the entire family. In addition to the doctor regularly employed in taking care of the accident cases, the company employs eight physicians who furnish all necessary attention in the homes of our employees, and in addition to this, an eye, ear, nose, and throat specialist of high standing. Should any family require surgical and hospital service, such surgical service is covered by the $1 and a hospital charge at the rate of 66 cents per day is made while confined in the hospital.

For a period of 40 months in the years 1897, 1898, 1899, and 1900 the company paid all the hospital and aid-fund charges for its employees.

At the present time a new hospital is being erected, which is estimated to cost $250,000. This hospital will be equipped with every modern appliance conducive to efficiency and the comfort of the patients.

AID FUND.

Established July 1, 1877, for the purpose of providing a fund to aid in the case of sickness, accident, or death by accident.

Every man who desires to accept the benefits of this fund shall be charged through the mine office monthly with the sum of 50 cents, and every boy whose wages shall not exceed the sum of $30 per month shall be charged 25 cents.

To the amount collected each month the Calumet & Hecla Mining Co. will add the same amount, to be placed to the credit of said fund.

When a contributor is disabled for labor by accident while actually engaged in work or labor for the company he shall receive from the aid fund, at the rate of $25 per month, or fractional part thereof.

When a contributor dies from injuries received there shall be paid from the fund the sum of $500.

When a contributor is disabled for labor from sickness he shall receive at a rate of $25 per month, or fractional part thereof, payment to commence on the fifth day of sickness.

This fund shall be governed by a committee consisting of the mine physician, the chief mining captain, and one miner.

From time to time there have been reductions in the charges for the fund and during the calendar years of 1897, 1898, 1899, and 1900 the company paid the employees' charges for the fund. The charges were resumed in January, 1901, on which date the wages of all employees were raised 2½ per cent to cover charges.

Amount collected from employees for fund to Jan. 1, 1913	$504,881.37
Amount donated by company	625,482.87
Total payments to members	1,596,707.14
Liabilities:	
Trustees	85,000.00
Calumet & Hecla Mining Co	25,290.02
	110,290.02
Assets:	
472 shares of Calumet & Hecla Mining Co.'s stock, selling price Aug. 7, 1913	193,520.00

PENSION FUND.

In 1904 the company started a pension fund. Certain employees who had attained the age of 60 years or more and who had been in the company's employ 20 years or more, were retired on a pension proportioned to length of service and wages and for a period of five years.

From May 1, 1897, to January 1, 1901, the company paid in addition to the sum provided for in case of death and permanent disability by the aid fund in accordance with its rules, a sum equal to that provided for by said rules, viz, $500 in case of death and $300 for permanent disability.

AID OUTSIDE OF REGULAR AID FUND.

To relieve wants of men not entitled to aid from employees' aid fund by its rules, from 1900 to 1909, $3,860.

FREE FUEL DISTRIBUTION.

To the widows or orphans of quondam employees, to any employees who have been unfortunate in any of many different ways, and to any with a very large family and no income but the man's wages, the company has for many years given free wood, sufficient for the whole summer's requirements, upon request, and many loads of coal when circumstances justified it. The teaming cost alone of this wood delivery is in the neighborbood of $100 per month.

CALUMET & HECLA BROOM FACTORY.

In July, 1903, the company built and equipped a broom factory and engaged a teacher, who taught three of our blind miners to make brooms. Total outlay, $1,400. Since that time the factory has been and is self-supporting.

PASTURAGE.

Pasturage is furnished to all employees for one cow, a charge of $1.50 being made for each additional cow.

GARBAGE REMOVAL.

All garbage is collected and removed without cost to the employees.

ELECTRIC LIGHT.

The company has made a contract with the local electric light company whereby employees living in company houses are furnished with electricity at a reduced rate, viz, 8 cents per kilowatt hour; the regular rate being 12 cents per kilowatt hour. This reduction is granted to the Calumet & Hecla Mining Co. in consideration of its ownership of the pole lines running over the company's property.

VOLUNTARY RELIEF FUND (INAUGURATED MAY, 1912).

Monthly payments to widows or orphans of deceased employees who lost their lives from either sickness or accident while in the employ of the company. This relief is started with each widow whose circumstances seem to require it shortly after the death of the support (breadwinner) of the family and continued until it is not necessary. Payments have been made for as long as 12 years in one case, and in one case over $1,200 was paid to a widow in less than 4 years, when she remarried.

One hundred and eighty widows or orphans (only a few of the latter) have been paid from this fund to date $29,292.

INSURANCE.

Any employee during illness is entitled to 8 months' aid or a total of $200, but should disability continue beyond the 8 months and death result within 12 months of the expiration of said aid, the Calumet & Hecla Mining Co. will pay the sum of $250 exclusively to such relatives of the deceased as are first named in the following list: (1) To the widow; (2) to the children; (3) to the father and mother or either of them; (4) to the brothers and sisters.

CHURCHES AND SCHOOLS.

To the thirty-odd churches in the community the company has contributed the sum of $35,762. The company has also given free a site for all the churches on its location, and to the Young Men's Christian Association, and has also made a liberal donation to the Young Men's Christian Association. The company also owns 10 school buildings.

In addition to the above it is a rule of the company that no one residing on company property shall be allowed to suffer from the want of necessities of life.

Free open-air concerts are given by the Calumet & Hecla Band throughout the summer season.

OSCEOLA CONSOLIDATED MINING CO.

The company contributes to charity and church organizations; all employees and their families have access to the public library and bathhouse in Calumet. There is no charge to employees on account of welfare agencies. The company pays $250 in case an employee dies from illness, the payment being made to the nearest dependent or relative.

Pensions of $15 to $20 per month are paid to old retired employees.

Isle Royale Copper Co.

Upon the death of an employee from sickness, the company pays the sum of $250 to his heirs, as are first named in the following list: (1) To the widow; (2) to the children; (3) to the father and mother or either of them; (4) to the brothers and sisters. No charge is made to employees for this benefit.

Ahmeek Mining Co.

Employees are allowed the use of small patches of ground for garden truck, etc.; also free pasturage.

They have access to the Calumet & Hecla library, which is well equipped. A charity account is carried in the cost sheet for necessary cases, and the company has given out strict orders that no one be allowed to suffer on company property for the want of necessaries of life whether it be an employee or not.

The company also maintains an employees' aid fund, by which the employees are paid $1 per day for sickness for each day after the sixth day they are off duty through sickness.

This aid fund also pays injured employees $1 per day from the sixth day to the fourteenth day after injury, as the compensation act covers only after the fourteenth day. No charges are made by the company for any of the above. Employees have not contributed to the aid fund since August, 1912.

Tamarack Mining Co.

Free access to library. Baths at 2½ cents. House rent free to widows. Wood supplied to widows. Company pays $250 on death of an employee from sickness.

Allouez Mining Co. and Centennial Copper Mining Co.

Free pasturage for cows. Wood (old shaft rollers, etc.) allowed to parties who are in need. Charity accounts carried on cost sheets and strict orders given that no person living on the company's land, whether employee or not, be allowed to be in dire necessity. Donation of $250 to the relative or relatives of a member of the aid fund who dies from illness. Outlying lands of the company are rented (preferably to employees) as farms, with rates from $10 to $20 per annum for 40 acres. Small, irregular pieces of land are rented, preferably to employees, as potato patches, etc., at nominal rentals, from $1 to $5 a year, depending on size, and in some cases no charge at all. Employees have privileges of Calumet & Hecla public bathhouse, at 2½ cents per bath.

Employees have privileges of Calumet & Hecla public library. Open air band concerts by the Calumet & Hecla band in summer. Preliminary plans have been made for a workmen's club house. Company ambulance to take patients to hospital, whether employee or member of employee's family, in case of accident or illness.

Superior Copper Co.

We carry a charity account. We have general orders that no one in our employ or living upon company property shall go hungry. All employees have free pastures for cattle and free land for gardens. In cases of death by sickness the company pays $250 to the nearest relative. There are free band concerts during the summer.

La Salle Copper Co.

This company has no special welfare agencies. Employees are on an equal footing with Calumet & Hecla employees in the use of the Calumet & Hecla bathhouse and library. The company will not knowingly allow any one on its property, whether employee or not, to suffer for lack of necessities; one pauper family receives free house rent. Pasturage for one cow to a familv is free.

Copper Range Consolidated Co.

There are no specific welfare agencies maintained by the company unless the maintenance of a public library at Panesdale and branches at other locations comes under this head, all of which is free to employees and the public. There are free baths at the library in Painesdale, and bathing equipment of change houses, tubs, and showers, are open to men at all times free.

LAKE COPPER CO.

A mine that is not yet paying expenses can not go far in the line of charities, but an aid fund is maintained for the employees, for which a deduction of 50 cents a month is made.

The Laurium Mining Co. reported, "This company has no special welfare agencies;" the Quincy Mining Co. reported, "None for which any charge is made;" the Wolverine Copper Mining Co., Franklin Mining Co., Hancock Consolidated Mining Co., Oneco Copper Mining Co., Houghton Copper Co., Winona Copper Co., and Mass Consolidated Mining Co. reported, "None;" and the Mohawk Mining Co. made no answer to the inquiry.

MICHIGAN COPPER DISTRICT.

The Michigan copper district, also called the Lake Superior copper range, embraces mines in Houghton, Keweenaw, and Ontonagon counties. These three counties are the most northern part of the Upper Peninsula of Michigan, and Houghton and Keweenaw counties constitute the Keweenaw Peninsula, which is about 40 miles wide, east to west, at its base, and projects about 70 miles northeast into Lake Superior. The greater number of mines in this district, and the mines with the largest production, are in Houghton County, which lies between Ontonagon County on the south and Keweenaw County on the north. The developed and developing part of the Michigan copper district is about 100 miles long, and varies in width from 3 to 5 miles. The lodes or veins of copper are tilted at various angles, from 20 degrees to 72 degrees with the horizon. Those that are being mined vary from 35 to 72 degrees.

The production of copper on a commercial basis in the Michigan district began in 1845. This district is the oldest copper-producing range in the United States, except Santa Rita, N. Mex., where production began about 1800. From 1845 to 1912, inclusive, Michigan produced 5,205,717,606 pounds of copper, or 29.53 per cent of the total output in the United States. In total production to the end of 1912 Michigan is surpassed only by Montana, which has produced 33.44 per cent of the output of the United States. For many years subsequent to 1845 the annual production of copper was greater in Michigan than in any other State. Its annual production is now surpassed only by that of Arizona and that of Montana. According to "Copper in 1912," by B. S. Butler, the smelter output in pounds of copper during 1912 was 359,322,096 in Arizona, 308,770,826 in Montana, 231,112,228 in Michigan, 132,150,052 in Utah, 83,413,900 in Nevada, 31,926,209 in Alaska, 31,516,471 in California, 29,170,400 in New Mexico, 18,395,256 in Tennessee, and in the whole United States, including Alaska, 1,243,268,720.[1]

The value of the 231,112,228 pounds of fine copper produced in Michigan during 1912 was $36,977,956.48, on the basis of the market price being 16 cents a pound; it rose to 17 cents during 1912.

Horace J. Stevens, author of The Copper Handbook, says in a paper on "Mines of the Lake Superior copper district":[2]

Occasionally immense masses, of many tons weight, are found, while in the richer mines there is much "barrel work," i. e., masses of virgin metal, ranging from a few

[1] U. S. Geological Survey, Mineral Resources of the United States, 1912.
[2] Read at twelfth annual meeting of the Lake Superior Mining Institute, held at Houghton, Mich., Aug. 8-10, 1906, and published in Vol. XII of the proceedings, pp. 8, 9.

pounds up to 100 pounds or more in weight. The principal reliance of the mines is upon stamp rock; that is, amygdaloid or conglomerate rock carrying native metal, in sizes ranging from that of a pea down to flakes of almost microscopical dimensions that are saved with difficulty from the slimes at the mill.

The following is quoted from the article on Michigan in "Copper in 1912":

A little native silver occurs with the copper. The lodes are of low grade, but characterized by great extent and rather uniform distribution of the metallic content. This, together with the fact that the ore is susceptible of high concentration with low cost of refining the resultant "mineral," makes it possible to work these low-grade deposits at a good profit. The native copper occurs in the lodes in masses varying from microscopic size to bodies weighing hundreds of tons. The richest lode mined at present yields less than 1.5 per cent copper, and the poorest rock treated yields but little above five-tenths of 1 per cent of metal. For this low-grade ore to be profitable it must be handled on a large scale; this has resulted in the construction of the immense plants that characterize the Lake district.

The following table taken from "Copper in 1912" shows that the percentage of copper extracted from the copper-bearing rock or ore is less than 1 per cent in Michigan, and less than in any other of the important copper-mining States:

Copper produced in 1912 from ores in which copper constitutes the principal value, by States.

State.	Copper ore.	Copper in ore.	Percentage.	Gold in ore.	Silver in ore.	Value in gold and silver per ton.
	Short tons.	*Pounds.*		*Fine ounces.*	*Fine ounces.*	
Alaska	93,452	29,230,491	15.63	7,428.08	376,593	$4.11
Arizona	6,542,154	359,407,265	2.75	57,507.81	2,378,593	.41
California	408,622	31,538,740	3.85	14,219.65	792,445	1.00
Colorado	13,718	1,622,605	5.91	8,759.83	224,327	23.13
Idaho	98,848	6,663,229	3.37	2,039.31	451,918	2.81
Michigan	11,411,941	218,138,408	.96	.....	528,453	.03
Montana	5,094,432	301,925,189	2.96	34,200.83	10,655,055	1.42
Nevada	3,276,169	85,579,530	1.31	23,511.60	173,545	.18
New Mexico	1,195,683	33,528,958	1 40	7,284.74	290,568	.275
North Carolina	500	75,915	7.59	43.86	523	2.25
Oregon	4,569	260,429	2.85	616.39	10,555	4.21
Pennsylvania and Maryland	225,200	594,022	.01	.....	502	.001
Tennessee	603,229	18,483,173	1.53	399.82	89,893	.105
Texas	22	721	1.64	.24	10	.50
Utah	6,670,845	127,712,169	.96	105,720.03	2,542,381	.56
Virginia	1,160	112,835	.98	.....	982	.52
Washington	15,715	1,054,805	3.35	13.431	230,883	9.21
Wyoming	155	27,570	8.89	.95	115	.59
Total and average	35,656,414	1,215,956,054	1.71	261,867.45	18,747,341	.47

During recent years great improvement has been made in the methods of stamping and smelting the copper-bearing rock, so that much rock which had too small a percentage of copper to pay for mining, stamping, and smelting by old methods can now be produced profitably. At Lake Linden, Mich., where the stamp mill of the Calumet & Hecla Mining Co. is located, there is a pile of sand, covering many acres, which is the refuse accumulated from the stamp mill for 40 years. Analysis has shown that there are 5 pounds of copper in each ton of this sand, and it is intended that the sand shall be put through a regrinding process, which has been invented in the last four years. A regrinding mill is being erected, and it is estimated that $100,000,000 worth of copper can be saved from this sand.

Following is a list of the mining companies now operating in the Michigan copper district, with the capitalization of each and the

dividends paid by each. While, as will be seen from the table, most of the subsidiary companies largely owned or controlled by the Calumet & Hecla Co. were not yet paying dividends, the annual statement of that company for 1912 showed that the value of real estate owned by the corporation and used in its business was $16,788,-104, and of real estate not used in its business was $686,520, and that the value of assets in excess of liabilities December 31, 1912, was $10,716,414. The extent of the stock interest of the Calumet & Hecla Co. in these subsidiary companies is shown on page 131.

[Information more in detail as to the organization and properties of these mining companies is given in the appendix.]

Company.	Year organized.	Capital stock.				Dividends to 1912, inclusive.
		Par value per share.	Authorized.	Amount issued, par value.	Amount paid in.	
Calumet & Hecla Mining Co.	1872	$25	$2,500,000	$2,500,000	$1,200,000	$120,050,000
Subsidiary companies:						
Ahmeek Mining Co	1880	25	1,250,000	1,250,000	850,000	1,350,000
Allouez Mining Co	1859	25	2,500,000	2,500,000	2,225,000	None.
Centennial Copper Mining Co	1896	25	2,500,000	2,250,000	1,750,000	None.
Cliff Mining Co	1910	25	2,500,000	1,500,000	780,000	None.
Gratiot Mining Co	1906	3	300,000	300,000	300,000	None.
Isle Royale Mining Co	1899	25	3,750,000	3,750,000	(1)	None.
La Salle Copper Co	1906	25	10,000,000	7,574,425	(1)	None.
Larium Mining Co	1909	25	1,000,000	1,000,000	(1)	None.
Osceola Consolidated Mining Co	1873	25	2,500,000	2,403,750	(1)	11,170,100
Seneca Mining Co	1860	25	500,000	500,000	200,000	None.
Superior Copper Co	1904	25	2,500,000	2,500,000	(1)	None.
Tamarack Mining Co	1882	25	1,500,000	1,500,000	(1)	9,420,000
White Pine Copper Co. (common)	1999	25	3,750,000	2,133,000	(1)	None.
White Pine Copper Co. (preferred)	1909	25	1,250,000	152,300	(1)	None.
Copper Range Consolidated Co	1901	100	40,000,000	39,369,200	(1)	12,902,249
Subsidiary companies:						
Baltic Mining Co	1897	25	2,500,000	2,500,000	1,800,000	7,750,000
Trimountain Mining Co	1899	25	2,500,000	2,500,000	2,000,000	1,250,000
Champion Copper Co	1899	25	2,500,000	2,500,000	2,500,000	943,876
Atlantic Mining Co	1872	25	2,500,000	2,500,000	1,180,000	None.
Quincy Mining Co	1848	25	3,750,000	2,750,000	2,150,000	20,430,000
Mohawk Mining Co	1898	25	2,500,000	2,500,000	2,100,000	2,250,000
Wolverine Copper Mining Co	1896	25	1,500,000	1,500,000	780,000	7,440,000
Franklin Mining Co	1857	25	5,000,000	4,158,950	2,362,284	1,240,000
Indiana Mining Co	1999	25	2,500,000	2,000,000	840,000	None.
North Lake Mining Co	1908	25	2,500,000	2,500,000	800,000	None.
South Lake Mining Co	1909	25	2,500,000	1,447,975	382,265	None.
Algomah Mining Co	1910	25	2,500,000	1,750,000	770,000	None.
Winona Copper Co	1898	25	5,000,000	4,166,675	3,833,341	None.
Houghton Copper Co	1909	25	2,500,000	1,675,000	402,000	None.
Mass. Consolidated Mining Co	1899	25	2,500,000	2,500,000	2,300,000	None.
Hancock Consolidated Mining Co	1906	25	5,000,000	4,158,950	2,362,284	None.
Oneco Copper Mining Co	1899	25	2,500,000	1,750,000	385,000	None.
Lake Copper Co	1905	25	2,500,000	2,500,000	300,000	None.
Victoria Copper Mining Co	1899	25	2,500,000	2,500,000	1,400,000	None.
Total			133,550,000	119,040,225		196,196,225

[1] Not reported.

The mines of several of the companies that have not paid dividends are still in the "prospect" stage of development.

The strike of 1913 affected the mines of all the companies included in the table except the Atlantic Mining Co., which was not then in operation, the White Pine Copper Co., and the Victoria Copper Mining Co.

The following is quoted from the annual report of the Calumet & Hecla Mining Co. for the year ending December 3, 1912.

The Calumet & Hecla Mining Co. owns:

Shares.	Company.	Shares issued.
24,200	Ahmeek Mining Co	50,000
41,600	Allouez Mining Co	100,000
41,500	Centennial Copper Mining Co	90,000
19,400	Cliff Mining Co	60,000
50,100	Gratiot Mining Co	100,000
30,500	Isle Royale Copper Co	150,000
152,977	La Salle Copper Co	302,977
37,550	Laurium Mining Co	40,000
32,750	Osceola Consolidated Mining Co	96,150
11,207	Seneca Mining Co	20,000
50,100	Superior Copper Co	100,000
19,400	Tamarack Mining Co	60,000
43,202	White Pine Copper Co., common	85,320
6,092	White Pine Copper Co., preferred	6,092

Several years ago the Calumet & Hecla Mining Co. formed a plan to secure control of a number of other mining companies, and it purchased stock in 13 companies—in some cases a majority of the stock and in other cases a controlling interest in the stock issue. In 1911 the Calumet & Hecla Co. decided to consolidate these 13 companies with itself and proposed to the stockholders of these companies that they exchange their stock for Calumet & Hecla stock on a basis that was offered by the directors of the Calumet & Hecla Co. The proposed basis of stock exchange was not satisfactory to some of the stockholders of the 13 companies, as they considered that they were not offered a fair equivalent. Some of the dissatisfied stockholders attacked the consolidation in the courts, on the ground that it was a violation of the Sherman antitrust law. After these suits had been started, the directors of the Calumet & Hecla Co., by a circular dated October 6, 1911, announced the abandonment of the plan for consolidation, or rather the plan for the exchange of stock. Nevertheless, these 13 companies are now practically consolidated with the Calumet & Hecla Co., for they have the same officers, practically the same directors, and they are managed as a single corporation. Suits are now pending to prevent the Calumet & Hecla Co., or its officers, from voting the shares that company owns in the 13 other companies. Two suits started by Godfrey M. Hyams are pending in the United States Circuit Court of Appeals for the Sixth Circuit and one started by Charles M. Turner is pending in the circuit court for the county of Ingham, Mich.

The Franklin Mining Co., Indiana Mining Co., North Lake Mining Co., South Lake Mining Co., and Algomah Mining Co., are under the same management.

The Winona Copper Co. and the Houghton Copper Co. are under the same management.

The Hancock Consolidated Mining Co. and the Oneco Mining Co. are under the same management.

The Copper Range Consolidated Co. and the Isle Royale Mining Co. were incorporated under the laws of New Jersey, the Gratiot Mining Co. under the laws of Maine, and all the other companies under the laws of Michigan.

The Copper Range Consolidated Co. is a holding company, and holds the stock of the Baltic Mining Co., the Trimountain Mining Co.,

the Champion Copper Co., the Atlantic Mining Co., the Copper Range Railroad Co., and the Copper Range Co. (a land and timber company).

The Mohawk Mining Co. and the Wolverine Mining Co. are under the same management.

The mines of the Ahmeek Mining Co. and Mohawk Mining Co are in Keweenaw County; the mines of the White Pine Copper Co., Indiana Mining Co., North Lake Mining Co., South Lake Mining Co., Algomah Mining Co., Mass Consolidated Mining Co., Lake Copper Co., and Victoria Copper Mining Co. are in Ontonagon County; the mines of the other companies in Houghton County.

The head office of the Hancock Consolidated Mining Co. is at Hancock, Mich.; the head offices of the Quincy Mining Co., Mohawk Mining Co., and Wolverine Mining Co. are in New York; the head offices of all the other companies are at Boston.

The people of Michigan have for years been discussing a measure, proposed in several sessions of the legislature, to assess a tonnage tax on all copper mined in the State. Sentiment in favor of this measure is undoubtedly growing, though strongly combatted by the mining companies. The argument urged in favor of the measure is that the people of Michigan are entitled to more of the benefits derived from its natural resources than they now receive. The greater part of the stock of the copper mining companies is owned in Boston or elsewhere in the Eastern States, and probably not over 10 per cent is owned by citizens of Michigan. An official list of the stockholders of the Calumet & Hecla Mining Co., the largest company in the district, which is on file in the office of the circuit court for the county of Houghton, shows 98,109 shares outstanding on January 1, 1912, the shares having a par value of $25 each. Of these 98,109 shares 4,550, or 4.64 per cent, were owned by citizens of Houghton County; 5,022, or 5.12 per cent, by citizens of other counties in Michigan, and 88,537, or 90.24 per cent, by persons whose residences were in other States.

Copper mining is practically the only industry in the Michigan copper district. The agricultural resources of the land have been but little developed. Originally it was a fine timber country. Most of the timber suitable for lumber has been cut, but much timber grown in the district is used in the mines.

The Great Lakes give the district cheap transportation facilities for the copper that is shipped out of the district and for the coal and other materials that are brought into the district. A ship canal, called the Portage Lake Canal, and owned by the United States, passes through Houghton County, greatly shortening the distance from one end of Lake Superior to the other. The copper district is served by the Mineral Range, the Copper Range, and the Keweenaw Central Railroads, which connect with the Chicago & North Western Railroad and the Chicago, Milwaukee & St. Paul Railroad.

POPULATION OF THE DISTRICT.

As shown by the Thirteenth Census of the United States, the population of Houghton County in 1910 was 88,098; Keweenaw County, 7,156; and Ontonagon County, 8,650. The principal places in these counties, with their population in 1910, were as follows: Houghton County—Houghton village, the county seat, 5,113; Hancock city, 8,981; Laurium village, 8,537; Red Jacket village, 4,211; Calumet Township (including Laurium and Red Jacket villages), 32,845. Keweenaw County—Ahmeek village, 766. Ontonagon County—Ontonagon village, 1,964.[1] Other statistics of the population of these counties, as shown by the census of 1910, appear in the following table:[2]

Population of Houghton, Keweenaw, and Ontonagon Counties, Mich.—Male and female, native and foreign born, 1910.

Population.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
Total population	88,098	7,156	8,650	103,904
Male	47,353	4,186	4,835	56,374
Female	40,745	2,970	3,815	47,530
White	87,990	7,153	8,644	103,787
Other races	108	3	6	117
Native white, native parentage	9,446	585	1,719	11,750
Native white, foreign parentage	35,761	2,739	2,930	41,430
Native white, mixed parentage	9,450	633	1,060	11,143
Foreign-born white	33,333	3,196	2,935	39,464
Males of voting age	25,481	2,365	2,732	30,578
Foreign-born white of voting age	18,001	1,856	1,615	21,472
Foreign-born white, naturalized	7,742	821	945	9,508
Foreign-born white having first papers	2,875	270	122	3,267
Alien	6,562	671	418	7,651
Unknown	822	90	130	1,042

As will be seen the population of the three counties is largely of foreign birth. Of the total white population, 103,787, in the three counties combined, 39,464, or 38.02 per cent, were foreign-born white, 41,430, or 39.92 per cent, were native white of foreign parentage; 11,143, or 10.74 per cent, were native white of mixed parentage, and only 11,750, or 11.32 per cent, were native white of native parentage.

Of the 21,472 foreign-born white of voting age in the three counties, only 9,508, or 44.28 per cent, were naturalized. In addition there were 3,267 foreign-born white who had taken out first papers, but they are not eligible to vote under the laws of Michigan.

[1] Thirteenth Census, bulletin: Population, Michigan. Number of Inhabitants, by Counties and Minor Civil Divisions.

[2] Thirteenth Census, bulletin: Population, Michigan. Composition and Characteristics of the Population.

The number of residents of the three counties who were born in foreign countries, as shown by the Thirteenth Census of the United States, was as follows:[1]

Number of white persons residing in Houghton, Keweenaw, and Ontonagon Counties, Mich., who were born in foreign countries, 1910.

Foreign white.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
Born in—				
Austria	3,333	508	165	4,006
Belgium	26	.....	7	33
Canada, French	2,616	128	199	2,943
Canada, Other	1,477	42	324	1,843
Denmark	51	9	24	84
England	4,459	640	163	5,262
Finland	11,536	1,200	1,158	13,894
France	146	5	8	159
Germany	1,723	87	195	2,005
Greece	65	.....	.....	65
Holland	17	1	.....	18
Hungary	921	158	4	1,083
Ireland	799	22	91	912
Italy	2,634	144	33	2,811
Norway	1,030	120	58	1,208
Russia	348	32	244	624
Scotland	353	15	15	383
Sweden	1,512	73	221	1,806
Switzerland	85	3	12	100
Turkey	73	.....	1	74
Wales	56	.....	2	58
Other foreign countries	73	9	11	93
Total	33,333	3,196	2,935	39,464

The development of the Michigan copper range began about 1844. The first foreigners employed in the range were Cornishmen, Scotchmen, Irishmen, and Germans. They came to the district in the early years of development, and they constituted the greater proportion of the mine workers during the first 30 years. Of these the Cornishmen or their descendants are now the most numerous. Canadians began to come prior to 1870. In the seventies Finlanders, Swedes, and Norwegians began to arrive, and in the eighties Italians. About 1890 Croatians began to come, and they were followed, in the nineties, by other Austrians, and by Hungarians and Poles. The Finlanders are twice as numerous as the mine workers of any other race.

As shown by the last preceding table, 39,464 of the white persons in the three counties were born in foreign countries, and of these 13,894, or slightly over one-third, were born in Finland, 6,625 in England, Wales, Scotland, and Ireland, 5,089 in Austria and Hungary, 4,786 in Canada, 3,098 in Norway, Sweden, and Denmark, 2,811 in Italy, and 2,005 in Germany.

The number of native white residents of the three counties, both of whose parents were born in foreign countries, as shown by the Thirteenth Census, was as follows.[1]

[1] Thirteenth Census, bulletin: "Population, Michigan. Composition and Character of the Population."

Number of white persons residing in Houghton, Keweenaw, and Ontonagon Counties, Mich., whose parents were born in foreign countries—1910.

Native white.	Houghton County.	Keweenaw County.	Ontonagon County.	Total.
Both parents born in—				
Austria	2,537	327	132	2,996
Canada—French	4,110	179	217	4,506
Canada—Other	730	25	184	939
Denmark	50	3	17	70
England	4,407	410	154	4,971
France	95	3	10	108
Germany	3,630	191	335	4,156
Holland	10	.....	5	15
Hungary	314	50	2	366
Ireland	1,796	92	211	2,099
Italy	1,674	82	26	1,782
Norway	930	95	38	1,063
Russia	302	66	196	564
Scotland	245	4	12	261
Sweden	1,439	58	151	1,648
Switzerland	84	3	7	94
All others of foreign parentage [1]	13,408	1,151	1,233	15,792
Total	35,761	2,739	2,930	41,430

[1] Native whites having both parents born in countries other than specified, and also those having both parents of foreign birth but born in different countries.

In reporting the number of native white persons both of whose parents were born in foreign countries, the census did not enumerate separately those born in Finland, but the number is undoubtedly large.

The mining companies dominate the economic, industrial, and political situation in the district. Mining is the only big industry, and all other business is dependent upon it. The mining companies own most of the land in the district, pay most of the taxes, and in some townships pay 90 per cent of the taxes. They refuse to sell any land even with the mining rights reserved. Therefore outside of the city of Hancock and the few incorporated villages there are very few freeholders, and nearly all of the houses are owned by the companies and rented to employees, or were built by employees on land rented by ground-rent leases. The terms of these leases are explained in a section of this report headed "Stipulations in leases."

Community interests are almost entirely subject to the direction of the mine managers. Most of the churches in the district were built on land that the mining companies have given and most of the schools have been built by the companies and rented by them to the townships. The mine managers control the school boards, and their powerful influence is felt in the nomination and election of village, township, and county officers. There are 18 members of the board of supervisors in Houghton County, and they assess property and decide on all expenditures for county purposes. Following is a list of the members of the present board, with the business connection of each:

Board of supervisors of Houghton County, April, 1913, to April, 1914.

Adams Township: A. D. Edwards, formerly chief clerk Atlantic Mining Co.; member of Michigan House of Representatives.

Calumet Township: James MacNaughton, general manager Calumet & Hecla Mining Co.

Chassel Township: Edward Hamar, general manager Worcester Lumber Co.

Duncan Township: A. G. Johnston, represents Pricket Farming Land & Lumber Co.
Elm River Township: Rex R. Seeber, superintendent Winona Mining Co.
Franklin Township: Richard Rourke, jr., bartender.
Hancock Township: Patrick Sollman, farmer.
Laird Township: Peter Hiltunen, farmer; contractor for getting out timber for Worcester Lumber Co.
Osceola Township: A. L. Burgan, superintendent Osceola Tamarack Stamp Mills.
Portage Township: Gust. T. Hartmann, formerly superintendent Copper Range Railroad. His brother is superintendent of the Mohawk mine.
Quincy Township: Charles L. Lawton, general manager Quincy Mining Co.
Schoolcraft Township: Samuel Eddy, sawmill owner; furnishes lumber to mining companies.
Stanton Township: Edward Koepel, superintendent stamp mills of Copper Consolidated Co.
Torch Lake Township: Charles Smith, chief clerk stamp mill of Calumet & Hecla Mining Co.
Hancock, first ward: John L. Harris, superintendent Hancock Mining Co.
Hancock, second ward: Charles S. Mason, coal, brick, wood, lime, and tile dealer; used by companies.
Hancock, third ward: John Funkey, sr., hardware merchant; sells to mining companies.
Hancock, fourth ward: Richard H. Hosking, stone and brick contractor.

It will be noticed that the board is largely composed of mine officers. Most of the other members are engaged in business enterprises, such as the lumber industry, which are closely connected with the mining companies and dependent on them. Among the 18 directors there is only one, and he is a Socialist, who did not usually vote with the others on questions before the board relating to the strike.

If all the foreigners in the copper range should become naturalized and the working people should vote together, they undoubtedly could control the elections, but fear discharge from employment by the companies, and that means in most cases that they could not obtain other employment in the district, and in some cases that they would lose the homes they have built. According to the United States census there were in 1910 in Houghton, Keweenaw, and Ontonagon Counties 30,578 males of voting age; the foreign-born white of voting age numbered 21,472; the foreign-born white who were naturalized numbered 9,508, and the foreign-born white who had first papers numbered 3,267. In Michigan foreign-born males who have taken out only first papers are not eligible to vote. The foreign-born white that are naturalized are only 31.09 per cent of the number of males of voting age, but the number of foreign-born white of voting age is 70.22 per cent of the total males of voting age.

Three daily papers printed in the English language are published in Houghton County—a morning paper at Houghton, an evening paper at Hancock, and an evening paper at Calumet. These three dailies advocate the policies of the mining companies and voice the opinions of the mine managers. A number of newspapers printed in foreign languages are published in Houghton County—a daily Finnish paper at Hancock (a strong socialistic organ), a daily Finnish paper at Calumet, a triweekly Finnish paper at Hancock, a semiweekly Finnish paper at Calumet, a daily Italian paper at Calumet, a triweekly Croatian paper at Calumet, and a weekly Slavonian paper at Calumet.

APPENDIX I.

Agreement Between Western Federation of Miners and Butte & Superior Copper Co.

Following is a copy of a contract or agreement between the federation and one of the Montana companies, which is similar in essentials to the contracts with other companies, all of which contracts are made for three years:

This agreement, made and entered into this 3d day of July, A. D. 1912, by and between the Butte Miners Union No. 1, Western Federation of Miners, hereinafter designated as the "union" party of the first part, and the Butte & Superior Copper Co. (Ltd.), hereinafter designated as the "mining company," party of the second part, witnesseth:

Whereas, the said mining company employs a number of the members of the union at and about its mines in the vicinity of Butte, Silver Bow County, Mont., and it is the desire of each of the respective parties hereto to perpetuate friendly relations and at the same time to have a definite agreement with reference to the compensation to be paid the members of the union employed by the mining company:

Now, therefore, in consideration of the mutual promises and agreements hereinafter specified, it is agreed between the respective parties hereto as follows, to wit:

1. That 8 hours in each 24 hours shall constitute a shift or day's work.

2. That the men employed underground, belonging to said union, shall start to go down the shaft or into other mine opening at the beginning of a shift, and shall leave their places of work at the expiration of eight and one-half hours from that time, it being understood that the miners shall have one-half hour of said time in which to eat lunch, the miners to be hoisted or come from their work on their own time. It is also understood that where three consecutive shifts are employed, eight consecutive hours shall constitute a day's work.

3. Where the word "miner" is used in this agreement [sic], shall mean all underground men engaged in any of the work of mining and cage tenders at the collar of the shaft.

4. The rate or amount of wages to be paid miners for a day's work or, proportionately, for a part of a day's work shall be determined as follows:

The average price of electrolytic copper as given in the Engineering and Mining Journal for each calendar month shall be the basis for determining the rate of wages.

5. The Mining Company agrees that it will during the continuance of this contract, pay a minimum wage scale, which shall be equal to the amount which the members of the Union were receiving during the month of May, 1912.

6. When the average monthly price of electrolytic copper is 15 cents and over and under 17 cents, the wages of all men within the jurisdiction of the Union employed underground shall be increased 25 cents per day over and above the wages in effect during the month of May, 1912; when the price of electrolytic copper is 17 cents and over, the wages of all men employed underground belonging to the Union shall be increased an additional 25 cents per day over the scale of wages received during the month of May, 1912.

The intention of the foregoing is that when the average monthly price of electrolytic copper is under 15 cents per pound all miners other than miners employed in shafts, station cutting and winzes, and station tenders shall receive $3.50 per day; for all miners employed in shafts, station cutting and winzes, and station tenders the wage rate shall be $4 per day. When the average monthly price of electrolytic copper is 15 cents and under 17 cents, then the wage rate shall be $3.75 per day for all miners other than miners employed in shafts, station cutting, and winzes and station tenders, and for all miners employed in shafts, station cutting, and winzes and station tenders the wage rate shall be $4.25 per day. When the average monthly price of electrolytic copper is 17 cents per pound or over, the wage rate shall be $4 per day for all miners other than miners employed in shafts, station cutting, and winzes and station tenders, and for all miners in shafts, station cutting, and winzes and station tenders the wage rate shall be $4.50 per day.

For all men employed upon the surface at or about any of the mines of Mining Company, over whom the said Union has acquired jurisdiction from the Mill and Smeltermen's Union, the wage rate shall be as follows: When the average monthly price of electrolytic copper is under 15 cents, the wage rate shall be the scale formerly required by that Union when copper was under 18 cents per pound; when the average monthly price of electrolytic copper is 15 cents and over, and under 18 cents per pound, then the wage rate shall be increased 25 cents per day above that scale; and when the average monthly price of electrolytic copper is 18 cents per pound and over, then the wage rate for such employees shall be increased an additional 25 cents per day. It is understood that whenever the Company has been paying during the month of May a rate in excess of the Union wage scale the foregoing increase shall not apply, but in no case shall any employee receive less than the Union scale, as above provided.

7. Should a miner's employment terminate by reason of voluntarily quitting, discharge, or other reason before the end of any calendar month, the rate of settlement in such cases shall be as follows:

The wage rate for any settlement made for any part of a month up to and including the 15th of such month shall be based upon the previous month's price of electrolytic copper.

The wage rate for any settlement made for any part of a month extending beyond the 15th of such month shall be made for the whole time of employment in said month at a rate based upon the average price of electrolytic copper for the first 15 days of the calendar month of settlement.

8. Should the authority used in ascertaining the market price of copper appear to either party to this agreement to be false or wrong at any time, then either party shall have the right to request that a representative be appointed by each party and those two persons shall appoint a third, a majority of whom shall decide on the method or means to be used in arriving at the correct price of copper for the purpose of this agreement.

9. Nothing in this agreement shall deny or preclude the right of employees, either themselves or through the said Union, from taking up with the Mining Company the question of any grievance or unfair treatment, or any matter herein agreed upon, that may require adjustment.

10. It is agreed that this agreement and contract shall take effect from June 1, 1912, and remain in full force and effect for a period of three years from and after the date hereof, and that said agreement shall remain in full force and effect thereafter until 30 days' written notice shall be given by either party to the other of its desire to terminate the contract.

In witness whereof, the said party of the first part has caused these presents to be executed in duplicate by the following committee, thereunto duly authorized by said first party, and the party of the second part has caused these presents to be executed in duplicate by its proper officers, thereunto duly authorized, the day and year first above written.

.....

By .....

.....

Authorized Committee of Party of the First Part.

.....

By .....

Its General Superintendent, Party of the Second Part.

APPENDIX II.

Organization and Properties of the Calumet & Hecla Mining Co. and Subsidiary Companies.

[From Moody's Manual, 1913.]

Calumet & Hecla Mining Co.

Incorporated in 1871, in Michigan, as a consolidation of the Hecla, Calumet, Portland, and Scott Mining Cos. Charter renewed in 1901 for 30 years and amended in 1905, giving the company the right to hold securities of other companies, in addition to doing a general mining and smelting business. Owns a majority of the capital stock of the Gratiot Mining Co., La Salle Copper Co., Laurium Mining Co., Seneca Mining Co., Superior Copper Co., and White Pine Copper Co., and has substantial holdings in Centennial Copper Mining Co., Ahmeek Mining Co., Allouez Mining Co., Isle Royale Copper Co., Osceola Consolidated Mining Co., Tamarack Mining Co., and Cliff Mining Co. See appended statements of these companies.

Having acquired all the capital stocks of the Frontenac Mining Co., Manitou Mining Co., and St. Louis Copper Co., the real and personal properties of these companies, together with that of the Dana Copper Co., were taken over by the Calumet & Hecla Mining Co. during 1912. The lands formerly owned by the Manitou, Frontenac, and Dana companies are now known as the "Manitou-Frontenac branch" and the lands of the St. Louis company as the "St. Louis branch."

Owing to the opposition on the part of minority stockholders the proposed plan of consolidation with subsidiaries, which was favorably voted upon by the shareholders of companies interested in March, 1911, was abandoned.

Properties.—The Calumet & Hecla mine proper includes about 2,750 acres in Houghton County, Mich., being one of the largest producers in the world. Company owns also large tracts west of the Tamarack mine and the Metalline and Dover tracts, with an area of 200 acres lying immediately south of the Tecumseh, and also vast tracts of timber lands in Michigan and Wisconsin. The total landed holdings of the company, including property controlled through subsidiary corporations, mining lands under option, and miscellaneous lands in Houghton, Keweenaw, and Ontonagon Counties, approximates 75,000 acres.

The stamp mills are at Lake Linden, 4 miles from the mines, on a tract of 998 acres, having several miles of frontage on Torch Lake. These mills have been entirely rebuilt, remodeling being completed in 1907. The new power plant at Lake Linden, which when completed will have a total capacity of 18,000 kilowatts, equal to more than 24,000 horsepower, furnishes electrical energy for the mine as well as for the mills. Water for the mills is supplied by five pumps, of which the Michigan is the most powerful in the world, having a daily capacity of 60,000,000 gallons. The four other pumps have a combined capacity of 72,000,000 gallons. The Torch Lake smelter is situated at Hubbel, about a mile south of the company's stamp mills, on a 30-acre site. The smelter has four furnace buildings, each 80 feet by 130 feet, and a blister copper furnace building 50 feet by 70 feet, with 11 reverberatory furnaces. The power plant at the smelter has three 125-horsepower boilers, and a fourth boiler generates steam by the combustion of waste gases from the reverberatory furnaces. The Torch Lake smelter has deep-water shipping facilities, and in addition is served by three railways.

The Buffalo Smelting Works are situated at Black Rock, N. Y., on the Niagara River. The works include reverberatory and blast furnaces, a 30-ton electrolytic refinery, and two mineral storage houses.

Company maintains three distinct systems of water works, one at the mines in Calumet, one at the mills in Lake Linden, and one on the shore of Lake Superior, 4 miles from Calumet, the latter pumping water for domestic uses. A power line was constructed to the Lake Superior water works in 1908-9, and the company is now sending water from these works to the mill boilers at Torch Lake.

The Hecla & Torch Lake Railroad, owned by the company, connects the mines, mills, shops, and smelter at Torch Lake, by upward of 20 miles of tracks. The dock

system includes a series of coal sheds at Lake Linden, with one of 200,000 tons capacity. There is a series of docks at the mills and smelter on Torch Lake, each wharf having at least 21 feet of clear water alongside. The ship canal connecting Torch Lake with the Government waterways on Portage Lake is owned and operated by the Calumet & Hecla. The canal is 21 feet deep and accommodates the largest vessels plying on the Great Lakes. Tolls on independent cargoes entering Torch Lake through this canal are charged by the company, the charge ranging from 2 cents per ton on soft coal to 50 cents per ton on package freight. The company has sawmills at the head of Torch Lake. Company owns extensive tracts of pine, hemlock, and hardwood timber along the southern shore of Lake Superior, these lands carrying about 500,000,000 feet of standing timber.

Securities owned, as of Dec. 31, 1912.

	Shares.	
	Number owned.	Number issued.
Ahmeek Mining Co	24,200	50,000
Allouez Mining Co	41,000	100,000
Centennial Copper Mining Co	41,500	90,000
Cliff Mining Co	19,400	60,000
Gratiot Mining Co	50,100	100,000
Isle Royale Copper Co	30,500	150,000
La Salle Copper Co	152,977	302,977
Laurium Mining Co	37,550	40,000
Osceola Consolidated Mining Co	32,750	96,150
Seneca Mining Co	11,207	20,000
Superior Copper Co	50,100	100,000
Tamarack Mining Co	19,400	60,000
White Pine Copper Co., preferred	6,092	6,092
White Pine Copper Co., common	43,202	85,320

Capital stock.—Authorized and issued, $2,500,000; par, $25, of which $12 per share is paid up, so that the actual cash capital paid in is only $1,200,000. Stock transferred at company's office, 12 Ashburton Place, Boston. Registrar: American Trust Co., Boston. Listed on Boston Stock Exchange.

Dividends have been paid in recent years as follows: 1896, $25; 1897, $40; 1898, $50; 1899, $100; 1900, $70; 1901, $45; 1902, $25; 1903, $35; 1904, $40; 1905, $50; 1906, $70; 1907, $65; 1908, $20; 1909, $27; 1910, $29; 1911, $24; 1912, $42; March, 1913, $10. Payments quarterly, March 20, at company's office, Boston. Total dividends paid from organization in 1871 to and including March 20, 1913, amounted to $121,050,000.

Gold notes.—$4,134,000 4 per cent gold coupon notes; dated February 18, 1909; due February 18, 1919; interest, February and August 18, at Old Colony Trust Co., Boston, trustee, coupon, $1,000. Callable at par and interest after three years. This is the last of four series of notes issued early in 1909 to finance the purchase from S. A. Bigelow of stocks of various mining companies. The other series were paid March 1, 1912, September 1, 1912, and February 18, 1913, respectively.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Cost per pound of copper produced.	Price received per pound.		Rock treated.	Refined copper produced.	Cost per pound of copper produced.	Price received per pound.
	Tons.	*Pounds.*	*Cents.*	*Cents.*		*Tons.*	*Pounds.*	*Cents.*	*Cents.*
1908	2,643,938	82,549,979	9.00	13.62	1911	2,909,972	74,130,977	8.52	12.82
1909	2,842,880	80,096,995	8.28	13.61	1912	2,806,510	67,856,429	9.86	16.65
1910	2,795,514	72,059,545	8.96	13.20					

Assets and liabilities.

	Dec. 31, 1912.	Dec. 31, 1911.	Apr. 29, 1911.	Apr. 30, 1910.	Apr. 30, 1909.	Apr. 30, 1908.
ASSETS.						
Cash at mine office	$135,585	$157,647	$157,529	$167,371	$182,316	$182,071
Cash at New York office	15,000	15,000	15,000	15,000	15,000	15,000
Cash and copper at Boston office	6,667,509	7,072,192	5,852,434	6,272,865	6,186,988	4,488,352
Bills receivable	953,212	516,293	546,257	708,255	406,001	650,017
Development and equipment fund				1,482	5,390	554
Insurance fund				983,177	967,920	959,724
Employees' aid fund			52,649	29,352	10,492	
Sinking fund	1,166,999	1,446,116	463,184	369,204		
Due from other companies	943,800	975,000	1,151,800			
Calumet Transportation Co	348,511	348,511				
Supplies	1,329,810	1,189,690	920,901			
Total assets	11,560,426	11,720,449	9,159,754	8,546,706	7,774,107	6,295,720
LIABILITIES.						
Drafts and bills payable	844,012	457,342	582,898	879,408	952,338	1,337,737
Keweenaw Association notes						250,000
Employees' aid fund						7,017
Total liabilities	844,012	457,342	582,898	879,408	952,338	1,594,755
Balance of assets	10,716,414	11,263,107	8,576,856	7,667,298	6,821,769	4,700,965

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president, Boston; James MacNaughton, second vice president and general manager, Calumet, Mich.; George A. Flagg, secretary and treasurer; W. C. Smith, assistant treasurer, Boston. Directors: F. L. Higginson, Quincy A. Shaw, Walter Hunnewell, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.

Annual meeting, second Thursday in June.

General office, 12 Ashburton Place, Boston, Mass.

Mine office, Calumet, Mich.; mill office, Lake Linden, Houghton County, Mich.

Companies Controlled by Calumet & Hecla Mining Co.

Ahmeek Mining Co. of Michigan.

Incorporated in 1880 in Michigan. Property, located on the Kearsage lode, just west of the Mohawk mine, consists of about 920 acres in Kearsage, Keweenaw County, Mich. Development work was begun in 1902 and now includes four shafts, No. 1 being 2,472 feet deep; No. 2, 2,643 feet; No. 3, 2,136 feet; and No. 4, 2,146 feet. Rock is being stamped at the Osceola and Tamarack mills. Stamp mill at Tamarack was completed in March, 1910. The boiler house, containing six boilers, and pump and power house, which has a 40,000,000-gallon pump engine and electric generator, were also completed early in 1910, the boilers, pumps, etc., going into commission May 30, 1910.

Capital stock.—Authorized and outstanding, $1,250,000; par, $25; $17 paid in. The Calumet & Hecla Mining Co. owns 24,200 of the 50,000 shares. Transfer agent: State Street Trust Co., Boston. Registrar: American Trust Co., Boston. Listed on Boston Stock Exchange. Dividends have been paid as follows: November 1, 1911, $2; 1912: January 20, $3; April 26, $4; July 22, $5; October 10, $6; 1913: January 10, $7; April 10, $7.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	298,178	6,280,241	12.66
1909	406,045	9,198,110	15 48
1910	530,365	11,844,954	11.05
1911	598,549	15,196,127	7.17
1912	652,260	16,455,769	7.85

Income account, years ended Dec. 31.

	Gross income.	Expenses, construction, etc.	Net income.	Real estate purchased.	Interest paid.	Dividends.	Balance.
1908	$857,649	$795,364	$62,285	$84,640	.....	.....	[1] $22,355
1909	1,285,607	1,420,874	[2] 135,867	10,350	$2,780	.....	[1] 148,997
1910	1,538,003	1,295,616	242,387	.....	13,067	.....	[3] 229,320
1911	1,960,513	1,083,186	877,327	.....	7,054	$250,000	[3] 620,273
1912	2,757,577	1,292,180	1,465,397	.....	.....	1,100,000	[3] 365,397

[1] Deficit. [2] Loss. [3] Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston, copper and silver unsold, $1,759,785; cash and accounts receivable at mine, $17,914; supplies and fuel at mine, $123,272; total, $1,900,972. Liabilities: Accounts payable at Boston, $37,413; accounts payable at mine, $134,550; dividend payable, January 10, 1913, $350,000; total, $521,763. Balance of assets, $1,379,209.

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; J. MacNaughton, general manager, Calumet, Mich. Directors: F. L. Higginson, Q. A. Shaw, R. L. Agassiz, Thos. N. Perkins, Jas. MacNaughton, W. A. Hodgson, T. L. Chadbourne, jr.

Annual meeting, second Tuesday in June.

Office, 12 Ashburton Place, Boston.

ALLOUEZ MINING CO.

Incorporated originally in September, 1859; reincorporated in 1889 under laws of Michigan. Owns over 3,400 acres on the mineral range, mostly in Houghton and Keweenaw Counties, Mich., a large tract lying immediately to the north of the Kearsarge branch of the Osceola mine, and carrying the Kearsarge lode. Company owns a one-half interest in the Lake Milling, Smelting & Refining Co. On December 31, 1912, No. 1 shaft was 209 feet below the seventeenth level, a distance of 3,422 feet from the surface, and No. 2 shaft was 173 feet below the twenty-first level, 3,382 feet from the surface. No. 2 shaft began producing in 1910.

Capital stock.—Authorized and outstanding, $2,500,000; par, $25; paid in, $22.25. Registrar: Old Colony Trust Co., Boston. Transfer agent: American Trust Co., Boston. No bonds. The Calumet & Hecla Mining Co. owns 41,000 of the 100,000 shares. Stock traded in on the Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	220,905	3,047,051	16.81
1909	253,049	4,031,532	13.39
1910	247,119	4,655,702	11.57
1911	288,610	4,780,494	13.30
1912	333,618	5,525,455	13.52

Income account, years ended Dec. 31.

	Total receipts.	Total expenses.	Construction and equipment at mine.	Payment, stamp mill, etc.	Construction and real estate.	Interest.	Deficit for year.
1905	$195,427	$118,714	$35,517	.....	.....	.....	$19,143
1909	542,764	450,533	75,879	.....	.....	$13,287	[1] 3,065
1908	406,753	422,509	6,571	.....	$84,596	.....	22,328
1907	557,235	450,861	84,846	$337,741	.....	.....	316,214
1906	668,455	394,796	82,630	.....	.....	.....	191,029
1910	609,858	521,345	.....	.....	.....	17,417	[1] 71,096
1911	629,229	574,400	42,976	.....	.....	18,232	6,379
1912	918,436	641,641	88,184	.....	.....	17,347	[1] 171,264

[1] Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston and unsold metal, $486,437; cash and accounts receivable at mine, $2,367; supplies at mine, $63,852; total, $552,656. Liabilities: Notes and accounts payable at Boston, $402,705; accounts payable at mine, $56,387; total, $459,091. Balance of assets, $93,564.

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant secretary and assistant treasurer, Boston, Mass.; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Quincy A. Shaw, H. F. Fay, G. A. Flagg, F. L. Higginson, W. L. Frost, Boston; Thos. N. Perkins, Westwood, Mass.; R. L. Agassiz, Newport, R. I.; Jas. MacNaughton, Calumet, Mich.

Annual meeting, second Wednesday in April.

Office, 12 Ashburton Place, Boston, Mass.

CENTENNIAL COPPER MINING CO.

Incorporated 1896, under laws of Michigan, as successor to Centennial Mining Co. Owns one half of the $500,000 capital stock of the Lake Milling, Smelting & Refining Co., the other half being owed by the Allouez Mining Co. Property comprises 640 acres, being section 12, township 56, range 33 west; also a triangular patch of about 30 acres bought to secure outcrop of the Kearsarge lode. The present management in 1897 began work on the Osceola lode, but later discontinued in order to open up and develop the Kearsarge lode, which is the only lode now being operated on the property. On December 31, 1912, No. 1 shaft was 189 feet below the thirty-fourth level, 3,821 feet from the surface; No. 2 shaft was 180 feet below the thirty-sixth level, 4,158 feet from the surface.

Capital stock.—Authorized, 100,000 shares; par, $25; outstanding, 90,000 shares, on which $19.50 has been paid in. The Calumet & Hecla Mining Co. owns 41,500 shares. Transfer agent: American Trust Co., Boston. Registrar: Old Colony Trust Co., Boston. Listed on Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	169,693	2,196,377	18.49
1909	196,525	2,583,793	15.61
1910	102,133	1,572,566	14.48
1911	86,543	1,493,834	12.69
1912	106,517	1,742,338	13.46

Income account, years ended Dec. 31.

	Balance, Jan. 1.	Sale of product.	Other receipts.	Total receipts.	Mine and other expenses.	Construction equipment, etc.	Total payments.	Surplus, Dec. 31.
1905..	$95,951	$230,130	$353,982	$680,062	$300,384	$47,899	$348,283	$331,780
1906..	331,780	439,516	11,645	782,941	366,965	75,666	442,631	340,310
1907..	340,310	438,253	235,598	1,014,161	469,983	414,193	884,176	129,985
1908..	129,985	294,165	334	424,484	389,952	16,272	406,224	18,260
1909..	18,260	343,051	2,602	363,913	397,360	5,918	403,278	[1]39,365
1910..	[1]39,365	204,778	2,173	167,586	222,281	5,412	227,693	[1]60,107
1911..	[1]60,107	192,997	2,560	195,557	189,512	.....	189,512	[1]54,061
1912..	[1]54,061	285,066	10	285,076	234,563	.....	234,563	[1]3,549

[1] Deficit.

Assets and liabilities, December 31, 1912.—Assets: Cash and accounts receivable at Boston and copper unsold, $183,263; cash and accounts receivable at mine, $3,121; supplies at mine, $47,501; total, $233,886. Liabilities: Notes and accounts payable at Boston, $209,956; accounts payable at mine, $27,479; total, $237,435. Balance of liabilities, December 31, 1912, $3,549.

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president; Geo. A. Flagg, secretary and treasurer; Geo. G. Endicott, assistant secretary and assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Quincy A. Shaw, R. L. Agassiz, H. F. Fay, Geo. A. Flagg, Jas. MacNaughton, F. L. Higginson.

Annual meeting, first Tuesday in April.

General office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

CLIFF MINING CO.

Incorporated December, 1909, in Michigan, and acquired the Cliff lands of the Tamarack Mining Co., in Keweenaw County, Mich.; through these lands runs for a distance of about 11,000 feet the Kearsarge lode. The Tamarack Mining Co. conveyed the Cliff lands, retaining, however, the timber thereon, and also placed in the treasury of the new company $100,000 cash; and received in exchange 60,000 of the authorized 100,000 shares. As of December 31, 1912, the Calumet & Hecla owned 19,400 of the 60,000 outstanding shares of stock.

A temporary shaft was started in August, 1910, and by December 31, 1911, it had reached a depth of 217 feet; no sinking was done in 1912.

Capital stock.—Authorized, $2,500,000; outstanding, $1,500,000, of which $780,000 paid in, consisting of 60,000 shares of $25 each, on which $13 paid in. Transfer agent: American Trust Co., Boston. Registrar: State Street Trust Co., Boston. Traded in on unlisted department of Boston Stock Exchange.

Expenses, year ended December 31, 1912.—Expended in exploration and development work, $14,796; miscellaneous expenses, $1,688; total, $16,484, less balance of interest receipts, $3,299; balance, $13,185; add balance of assets, December 31, 1911, $75,757; balance of assets, December 31, 1912, $62,572.

Assets and liabilities, December 31, 1912.—Assets: Cash and accounts receivable in Boston, $58,428; cash and accounts receivable at mine, $4,646; supplies at mine, $544; total, $63,618. Liabilities: Accounts payable at mine, $1,046; balance of assets, December 31, 1912, $62,572.

Officers.—R. L. Agassiz, president; Quincy A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissel, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Rodolphe L. Agassiz, Francis W. Hunnewell, Francis L. Higginson, Quincy A. Shaw, Thomas N. Perkins, George A. Flagg, James MacNaughton.

Annual meeting, first Wednesday in April.

General offices, 12 Ashburton Place, Boston, Mass.

GRATIOT MINING CO.

Incorporated January 29, 1906, in Maine. Company was formed for the purpose of taking over 600 acres of land near the Mohawk mine. Shaft No. 1 had, on December 31, 1911, been sunk to a depth of 1,971 feet and Shaft No. 2 to a depth of 1,521 feet. Owing to the low grade of rock and the condition of the copper market, together with the fact that there were no suitable milling facilities for a reasonably large produc-

tion, the property was closed down on March 31, 1911; no active operations were conducted during 1912.

Capital stock.—Authorized and issued, $300,000; par, $3. Fully paid and nonassessable. A majority (50,100 shares) is owned by Calumet & Hecla Mining Co.

Earnings and expenses, year ended December 31, 1912.—Receipts from sales of machinery, etc., $8,585; expenses and interest, $21,555; excess of expenses over receipts, $12,970; balance of liabilities, December 31, 1911, $345,541; balance of liabilities, December 31, 1912, $358,511.

Assets and liabilities December 31, 1912.—Assets: Cash at Boston, $598; cash and accounts receivable at mine, $8,702; supplies on hand at mine, $639; total, $9,939. Liabilities: Accounts payable at Boston, $368,300; accounts payable at mine, $149; total, $368,449; balance of liabilities, $358,511.

Officers.—Quincy A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer, Boston, Mass.; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, Boston, Mass.; R. L. Agassiz, Newport, R. I.; J. MacNaughton, Calumet, Mich.; G. A. Flagg, Holliston, Mass.

Annual meeting, first Thursday after third Wednesday in August, at Portland, Me.

Office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

ISLE ROYALE COPPER CO.

Incorporated March 14, 1899, in New Jersey, as a consolidation of the Isle Royale Consolidated Mining Co. and the Miners' Copper Co. The present company began operations on April 20, 1899, with all the property and cash assets of the old Isle Royale Consolidated Mining Co., increased by 1,400 acres of new mining property and $1,000,000 in cash from the Miners' Copper Co. In all the company owns about 2,800 acres of valuable copper mining land in Houghton County, Mich. In 1907 purchased for $220,000 the Hussey Howe tract of 240 acres adjoining and northeast of the Superior property, controlled by Calumet & Hecla. This tract is surrounded by Isle Royale lands, and is supposed to carry the Baltic lode. Development work on the properties was begun in August, 1896. On December 31, 1912, No. 2 shaft was 84 feet below twenty-ninth level and 3,162 feet from surface, No. 4 was 5.5 feet below fifteenth level and 1,939 feet from surface, No. 5 was 47.5 feet below ninth level and 1,206 feet from surface, No. 6 was 4.5 feet below thirteenth level and 1,553 feet from surface, "A" shaft was 18 feet below fifth level and 972 feet from surface. In September, 1912, ground was broken for No. 7 shaft.

The Isle Royale Railroad, owned by the company, connects the mine and mill with about 5 miles of main line and has a junction with the Duluth, South Shore & Atlantic Railway. Equipment includes three locomotives and forty 40-ton steel rock cars. The stamp mill is situated at the mouth of Pilgrim River, the mill site having nearly 1 mile of frontage on Portage Lake. The mill has three heads, each with recrushing rolls, the single head having a daily capacity of 500 tons, and the two compound heads a daily capacity of 750 tons each. Power for the mill is furnished by a 750-horsepower engine, taking steam from four 250-horsepower boilers in a 46 by 72 feet boiler house at the rear of the mill. There is a 32 by 600 feet wharf, with deep water, at the mill site. Water is furnished the mill by a 16,000,000-gallon pump discharging into a 32-foot steel water main running 2,200 feet from pump house to mill. Three 100-horsepower boilers furnish pumping power.

Capital stock.—Authorized and outstanding, $3,750,000; par $25. Transfer agent: Old Colony Trust Co., Boston, Mass. Registrar: State Street Trust Co., Boston, Mass. No bonds. The Calumet & Hecla Mining Co. owns $762,500 of the stock. Initial dividend of $1 per share paid March 31, 1913.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	218,940	3,011,664	28.99
1909	401,280	5,719,056	16.64
1910	520,869	7,567,399	11.84
1911	457,440	7,490,120	10.85
1912	531,105	8,186,957	11.89

Income account, years ended Dec. 31.

	Gross receipts.	Expenses, etc.	Net profits.
1906	$588,340	$431,372	$156,968
1907	492,224	763,659	[1] 271,435
1908	427,364	878,575	[1] 451,211
1909	790,528	951,519	[1] 160,991
1910	988,233	895,920	92,313
1911	969,365	812,657	156,708
1912	1,395,637	975,870	419,767

[1] Deficit.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston, copper and silver unsold, $587,564; cash and accounts receivable at mine, $13,708; supplies and fuel at mine, $103,385; Lake Superor Smelting Co. stock, $32,000; total, $736,657. Liabilities: Notes and accounts payable at Boston, $72,914; accounts payable at mine, $106,000; total, $178,914. Balance of assets, December 31, 1912, $557,743.

Officers.—Rodolphe L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; Clarence H. Bissell, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, R. L. Agassiz, C. N. King, F. L. Higginson, W. E. L. Dillaway, C. O. Whitten, F. L. Whitcomb.

Annual meeting, first Wednesday in April at Jersey City, N. J.

Office, 12 Ashburton Place, Boston, Mass.

LA SALLE COPPER CO.

Incorporated December, 1906, in Michigan, to take over control of the properties of Tecumseh Copper Co., the La Salle and Caldwell companies (under option to Calumet & Hecla), and certain lands contributed by the Calumet & Hecla and the Sheldon estate. The charter of the Tecumseh Copper Co. expired on February 3, 1910, and on May 11, 1910, the La Salle Copper Co. purchased the entire property of that company. Prior to this purchase La Salle owned all but 159 shares of the Tecumseh stock. The properties comprise the Douglas and Sheldon estates, 400 acres; La Salle (association), 840 acres; Tecumseh, 560 acres; Caldwell, 560 acres; total, 2,460 acres. The company's present mineral expectations are confined to the Kearsarge lode, which has been demonstrated both by diamond drill and by shafts. The policy is to concentrate work in developing the properties and in blocking out ore. On December 31, 1912, No. 1 shaft was 38 feet below twentieth level and 2,146 feet from surface, No. 2 was 49 feet below seventeenth level and 1,770 feet from surface, No. 5 was 128 feet below tenth level and 1,450 feet from surface, and No. 6 was 7 feet below seventh level and 882 feet from surface. Refined copper produced in 1910, 633,778 pounds; in 1911, 280,598 pounds; no production in 1912. With the higher prices for copper obtaining, it was planned to resume operations in June, 1912, but it was impossible to secure a sufficient working force until November.

Capital stock.—Authorized, $10,000,000; outstanding, $7,574,425; par, $25. The Calumet & Hecla Co. contributed $1,000,000 cash to the treasury and agreed to loan the company $750,000 additional if necessary in return for which, and its contribution of 240 acres to the property, it received 161,750 shares of the 302,977 shares issued. As of December 31, 1912, Calumet & Hecla Mining Co. owned 152,977 shares of the stock. Transfer agent: Old Colony Trust Co., Boston. Registrar: State Street Trust Co., Boston. Listed on Boston Stock Exchange.

Receipts and expenses, year ended December 31, 1912.—Interest and miscellaneous receipts, $10,244; expenses at mine, $19,998; expenses at eastern office, etc., $6,434; construction at mine, $4,037; deficit, $21,124.

Assets and liabilities, December 31, 1912.—Assets: Cash and accounts receivable at mine, $6,085; cash and accounts receivable at Boston, $239,400; supplies on hand, $646; total, $246,131. Liabilities: Accounts payable at mine, $5,472. Balance of assets, December 31, 1912, $240,660.

Officers.—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; W. C. Smith, assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, Walter

Hunnewell, Boston; R. L. Agassiz, Newport, R. I.; G. A. Flagg, Holliston, Mass.; James MacNaughton, Calumet, Mich.; T. N. Perkins, Westwood, Mass.

Annual meeting, second Wednesday in June.

Office, 12 Ashburton Place, Boston, Mass.; mine office, Calumet, Mich.

LAURIUM MINING CO.

Incorporated in Michigan. Lands comprise 325 acres of surface rights, with mineral rights to 575 acres, lying east of Calumet & Hecla Mine. On December 31, 1912, shaft No. 1 was 32 feet below fourteenth level and 1,444 feet from the surface. A new hoist, capable of working to a depth of 2,100 feet, and a larger compressor have been installed in place of the old equipment.

Capital stock.—Authorized and issued, $1,000,000; par, $25. The Calumet & Hecla Mining Co. owns $938,750 of the stock.

Receipts and expenses, year ended December 31, 1912.—Interest received, $1,843; expenses at mine, $44,507; eastern office, $1,722; construction at mine, $5,681; excess of expenses, $50,067.

Assets and liabilities, December 31, 1912.—Cash, accounts receivable, and supplies, $22,187; accounts payable, $3,722. Balance of assets, $18,465.

Officers.—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, F. L. Higginson, G. A. Flagg, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.

Annual meeting, second Tuesday in June.

General office, 12 Ashburton Place, Boston, Mass.; mine office, Houghton, Mich.

OSCEOLA CONSOLIDATED MINING CO.

Incorporated in 1873, in Michigan, to acquire a copper mining property at Hancock, Houghton County, Mich., bordering on the famous Calumet & Hecla mines. Company was consolidated with the Opechee Mining Co. in 1879, and in 1897 purchased the Kearsarge Mining Co., this purchase carrying with it the control of the Iroquois Copper Co. and the Tamarack Junior Mining Co. Over 35 miles of underground work has been done. Lands, 2,120 acres, in four separate tracts; also an extensive mill site in Houghton County, Mich., and considerable holdings of timber and miscellaneous lands in Houghton and Keweenaw Counties, Mich. Property includes four mines, or "branches," known as the Osceola, North Kearsarge, South Kearsarge, and Tamarack Junior; the latter being idle.

The two stamp mills, completed in 1899 and 1902, respectively, adjoin those of the Tamarack, on the shore of Torch Lake. The original mill, built in 1886, was torn down in 1905. The boiler house, adjoining the mills and furnishing power for both, has three 250-horsepower boilers, delivering steam at 150 pounds pressure, and nine 250-horsepower boilers, operated under 105 pounds pressure. Rock is transported from the various mines to the mills by the Hancock & Calumet Railroad, a branch of the Duluth, South Shore & Atlantic Railway.

During 1912 all the real and personal property of the Hancock Chemical Co. and the Tamarack-Osceola Copper Manufacturing Co. was sold and the Osceola Consolidated Mining Co. received net for its stock holdings $46,667.

Total depth of shafts, December 31, 1912: Osceola branch—No. 5, 110 feet below forty-sixth level, 4,623 feet from surface; No. 6, 99 feet below forty-sixth level, 4,592 feet from surface. South Kearsarge branch—No. 1, 20 feet below twenty-third level, 2,820 feet from surface; No. 2, 22 feet below sixteenth level, 1,992 feet from surface. North Kearsarge branch—No. 1, 190 feet below thirty-fourth level, 3,873 feet from surface; No. 3, 161 feet below thirty-first level, 3,251 feet from surface; No. 4, 187 feet below fifteenth level, 1,449 feet from surface.

Capital stock.—Authorized, $2,500,000; outstanding, $2,403,750; the balance, $96,250, being held in the company's treasury; par, $25. Transfer agent: American Trust Co., Boston. Registrar: State Street Trust Co., Boston. The Calumet & Hecla Mining Co. owns 32,750 shares of the 96,150 shares of stock outstanding. Dividends in 1899, 1900, and 1901, $6 per share each; 1902 and 1903, none; 1904, $2 per share; 1905, $4; 1906, $10; 1907, $13; 1908, $2; 1909, $8; 1910, $10; 1911, $7.50; 1912, $12.50; January 31, 1913, $3; payments semiannually, January and July. Total dividends paid from 1878 to and including January 31, 1913, $11,170,100. Listed on Boston Stock Exchange.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost of refined copper per pound.
	Tons.	*Pounds.*	*Cents.*
1908	1,241,400	21,250,794	10.25
1909	1,494,845	25,296,657	9.47
1910	1,217,720	19,346,566	9.37
1911	1,246,596	18,388,193	9.28
1912	1,246,557	18,413,387	10.36

Earnings, expenses, and income account, year ended Dec. 31.

	Gross earnings.	Operating expenses.	Net earnings.	Construction.	Dividends.	Surplus for year.	Previous surplus.	Total surplus.
1905	$2,961,971	$1,815,119	$1,146,251	$207,505	$576,900	$361,846	$505,929	$867,775
1906	3,646,811	1,868,140	1,778,671	155,482	1,153,800	469,389	867,775	1,337,164
1907	2,481,306	1,674,177	807,129	84,374	673,050	49,705	1,337,164	1,386,869
1908	2,914,544	2,091,823	822,721	145,615	576,900	100,205	1,386,869	1,487,074
1909	3,465,857	2,285,401	1,180,456	109,810	961,500	109,146	1,487,074	1,596,219
1910	2,571,865	1,746,340	825,525	66,939	769,200	[1] 10,614	1,851,220	1,840,606
1911	2,371,373	1,615,780	755,593	90,965	673,050	[1] 8,422	1,840,606	1,832,183
1912	3,118,604	1,734,199	1,384,405	174,331	1,153,800	56,274	1,832,184	1,888,458

[1] Deficit.

Assets and liabilities, Dec. 31.

Assets.	1912	1911	Liabilities.	1912	1911
Cash accounts receivable at Boston and unsold metal	$1,775,509	$1,740,832	Accounts payable at mines.	$265,543	$243,635
			Accounts payable at Boston	34,270	22,311
Cash and accounts receivable at mines	12,740	15,527	Dividends payable in January	288,450	336,525
Supplies and fuel	250,063	239,886	Surplus	1,888,458	1,832,184
Wood and timber lands	37,309	37,309			
Mineral Range Railroad stock	341,100	341,100			
Lake Superior Smelting Co. stock	60,000	60,000			
Total	2,476,721	2,434,654	Total	2,476,721	2,434,654

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: F. L. Higginson, Q. A. Shaw, R. L. Agassiz, James MacNaughton, William H. Dwelly, jr., Guy W. Currier, Thomas N. Perkins.

Annual meeting, second Thursday in March.

Office, 12 Ashburton Place, Boston, Mass.

SENECA MINING CO.

Incorporated March 23, 1860, in Michigan. Lands, originally 3,240 acres, were reduced by 1,880 acres, transferred to the Ahmeek Co. The remaining tract is located just north of the Mohawk and Ahmeek mines, and carries the Calumet, Kearsarge, and Allouez conglomerates, and the Osceola and Kearsarge amygdaloidal beds. No development work was done during 1912.

Capital stock.—Authorized and issued, $500,000; paid in, $201,000; par, $25, of which $10.05 is paid in. The Calumet & Hecla Mining Co. owns 11,207 shares of the stock.

Expenditures, year ended December 31, 1912.—Mine expenses, $2,032; mine taxes, $657; eastern expenses, $1,844; interest, $5,675; total, $10,208.

Assets and liabilities, December 31, 1912.—Assets: Cash at Boston, etc., $876; supplies at mine, $1,021; total, $1,897. Liabilities: Notes and accounts payable at Boston, $140,721; accounts payable at mine, $3,496; total, $144,216. Balance of liabilities, December 31, 1912, $142,319.

Officers.—R. L. Agassiz, president; G. A. Flagg, secretary and treasurer; A. Garceau, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: R. L. Agassiz, Newport, R. I.; G. A. Flagg, Holliston, Mass.; F. L. Higginson, Boston; James MacNaughton, Calumet, Mich.; T. L. Chadbourne, jr., New York.

Annual meeting, fourth Monday in March.

General office, 12 Ashburton Place, Boston, Mass.; mine office, Ahmeek, Mich.

SUPERIOR COPPER CO.

Incorporated July 22, 1904, in Michigan. Lands, 450 acres, between the Baltic and Isle Royale mines. Company has a two-year lease on two tracts of the Atlantic mill, giving a stamping capacity of about 700 tons daily. In order to ship rock to the Lake Milling Co.'s stamp mill at Point Mills, a line of railroad has been built to connect No. 1 shaft with the Isle Royale Railroad. On December 31, 1912, shaft No. 1 was 254 feet below 18th level and 2,014 feet from surface; No. 2 shaft was 41 feet below 14th level and 1,341 feet from surface.

Capital stock.—Authorized and issued $2,500,000; par, $25. The Calumet & Hecla Mining Co. owns $1,252,500 of the stock. Transfer agent: American Trust Co., Boston. Registrar: Old Colony Trust Co., Boston.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	962	21,244	[1]
1909	81,641	1,789,315	[1]
1910	140,514	3,181,041	14.29
1911	162,599	3,236,233	15.31
1912	172,322	3,921,974	12.75

[1] Not reported.

Income account, years ended Dec. 31.

	Gross value of fine copper.	Silver sales and miscellaneous.	Total.	Expenses.	Construction.	Interest.	Balance.
1911	$411,267	$19,617	$430,884	$453,972	$28,901	$12,527	[1] $65,516
1912	646,771	26,261	673,032	478,395	12,165	9,599	[2] 172,873

[1] Deficit. [2] Surplus.

Assets and liabilities, December 31, 1912.—Assets: Cash, accounts receivable at Boston and copper and silver unsold, $290,868; cash and accounts receivable at mine, $10,188; supplies, $8,505; total, $309,561. Liabilities: Accounts payable at Boston, $184,565; accounts payable at mine, $25,212; total, $209,777. Balance of assets, December 31, 1912, $99,784.

Officers.—Q. A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; A. J. Garceau, assistant secretary and assistant treasurer, Boston; James MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, Boston; R. L. Agassiz, Newport, R. I.; James MacNaughton, Calumet, Mich.; G. A. Flagg, Holliston, Mass.; F. L. Higginson, Boston.

Annual meeting, second Tuesday in June.

General office, 12 Ashburton Place, Boston; mine office, Calumet, Mich.

TAMARACK MINING CO.

Incorporated in 1882 in Michigan. Company owns over 1,110 acres in Keweenaw County, Mich., with about 7,000 additional acres of timber and other lands. The mine adjoins the Calumet & Hecla on all sides. It has been operated for a great many years and extensive development work has been done. The mine is opened by five shafts. The No. 1 shaft is 109 feet below the nineteenth level and 3,409 feet from the surface; No. 2 shaft is 23 feet below the thirtieth level and 4,355 feet from the surface; No. 3 shaft is 29.5 feet below the eighteenth level and 5,253 feet from the surface; No. 3 shaft (inclined) is 113 feet below the twenty-first level and 406 feet below the eighteenth level; No. 4 shaft is 4,450 feet from the surface; and No. 5 shaft is 147 feet below the fortieth level and 5,308.5 feet from the surface.

Company has two stamp mills on Torch Lake, with a combined daily capacity of 3,500 tons of conglomerate rock. Mill No. 1 has five heads, three of which are compounded; the boiler house has four 200-horsepower boilers. Mill No. 2 has two stamps, and the boiler house has seven 200-horsepower boilers. The pump house, owned jointly with the Osceola Co., has two 40,000,000-gallon pumps and one 15,000,000 gallon pump.

Late in 1909 the Tamarack Co. sold its Cliff lands to the Cliff Mining Co. on terms shown in Manual for 1912, page 3960.

During 1912 all the real and personal property of the Hancock Chemical Co. and the Tamarack-Osceola Copper Manufacturing Co. was sold, and the Tamarack Mining Co. received net for its stock holdings $14,332.

Production, etc., years ended Dec. 31.

	Rock treated.	Refined copper produced.	Total cost per pound of refined copper.
	Tons.	*Pounds.*	*Cents.*
1908	654,897	12,806,127	15.24
1909	689,099	13,553,207	14.30
1910	525,554	11,063,606	14.70
1911	392,338	7,494,077	15.56
1912	421,385	7,908,745	13.15

Income account, years ended Dec. 31.

	Total receipts.	Total expenses.	Gross profit.	Dividends.	New construction.	Balance.
1906	$1,917,232	$1,413,084	[1] $504,148	[2] $300,000	$90,518	[1] $113,630
1907	1,835,970	1,751,835	[1] 84,135	[3] 240,000	93,410	[4] 249,277
1908	1,716,974	1,870,191	[4] 153,217	.....	[5] 82,389	[4] 235,606
1909	1,906,878	1,890,810	[1] 16,068	.....	44,613	[4] 28,546
1910	[6] 2,230,017	1,563,717	[1] 666,300	.....	62,667	[1] 603,633
1911	957,916	1,146,876	[4] 188,960	.....	4,239	[4] 193,199
1912	1,309,807	1,040,194	269,613	.....	.....	[1] 269,613

[1] Surplus.
[2] 20 per cent.
[3] 16 per cent.
[4] Deficit.
[5] Includes $49,538 for cliff exploration.
[6] Includes $770,315 received from sale of cliff lands, timberlands, and other income, and $25,000 Lake Superior Smelting Co. dividend.

Capital stock.—Authorized and issued, $1,500,000; par, $25. Transfer agent: Old Colony Trust Co., Boston. Registrar: State Street Trust Co., Boston. Total dividends paid to and including July, 1907, $9,420,000; none since. The Calumet & Hecla Mining Co. owns $485,000 of the stock. Listed on Boston Stock Exchange.

Assets and liabilities, Dec. 31.

Assets.	1912	1911	Liabilities.	1912	1911
Cash and accounts receivable and copper unsold	$541,289	$491,748	Notes and accounts payable	$379,290	$610,914
Supplies and fuel at mine	240,567	234,949	Surplus	1,120,862	851,249
Wood and timber lands	184,596	171,766			
Hancock and Calumet bonds	99,000	99,000			
Mineral Range railroad stock	364,700	364,700			
Lake Superior Smelting Co. stock	100,000	100,000			
Total	1,500,152	1,462,163	Total	1,500,152	1,462,163

Officers.—R. L. Agassiz, president; Q. A. Shaw, vice president; G. A. Flagg, secretary and treasurer; C. H. Bissell, assistant secretary and assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich.; Directors: R. L. Agassiz, Q. A. Shaw, Jas. MacNaughton, F. L. Higginson, F. L. Whitcomb, R. S. Bradley, Edwin C. Lewis.

Annual meeting, first Wednesday in April.

Office, 12 Ashburton Place, Boston, Mass.

WHITE PINE COPPER CO.

Incorporated in 1909, in Michigan, to develop 4,739$\frac{3}{16}$ acres of lands which carry the Nonesuch lode, conveyed to the company by the Keweenaw Association and others. The Calumet & Hecla Mining Co., having expended $100,000 on the property, received 43,202 shares of White Pine common stock, and in return for further sums advanced for development and equipment is entitled to receive preferred stock at par. Up to December 31, 1912, the Calumet & Hecla Co. had received 6,092 shares of preferred stock, being the entire amount issued. On December 31, 1912, No. 1 temporary shaft was 67 feet below the first level and 213 feet from the surface; No. 2 temporary shaft was 4 feet below the first level and 135 feet from the surface.

Capital stock.—Authorized, $3,750,000 common and $1,250,000 5 per cent cumulative preferred; outstanding, December 31, 1912, $2,133,000 common and $152,300 preferred; par $25. The Calumet & Hecla Mining Co. owns $1,080,050 common and all the preferred. The preferred stock is issued from time to time to provide funds for development, etc., and is to be retired out of earnings before dividends are paid on the common.

Receipts and expenses, year ended December 31, 1912.—Sales of 2,221 shares of preferred stock at par, $55,525; interest, $2; total, $55,527. Deduct: Running expenses at mine, $48,159; construction at mine, $8,504; taxes, $1,000; eastern office, $1,037; timber purchased, $321; total, $59,021. Excess of expenses, $3,494.

Assets and liabilities, December 31, 1912.—Assets: Cash, $684; supplies at mine, $2,413; total, $3,097. Liabilities: Accounts payable at Boston, $15,400; accounts payable at mine, $4,398; total, $19,798. Balance of liabilities, December 31, 1912, $16,701.

Officers.—A. Shaw, president; R. L. Agassiz, vice president; G. A. Flagg, secretary and treasurer; G. G. Endicott, assistant treasurer, Boston; Jas. MacNaughton, general manager, Calumet, Mich. Directors: Q. A. Shaw, R. L. Agassiz, D. S. Dean, F. L. Higginson, F. W. Hunnewell, G. A. Flagg, Jas. MacNaughton.

Annual meeting, first Tuesday in April.

General office, 12 Ashburton Place, Boston.

Copper Range Consolidated Co.

Incorporated December 2, 1901, under laws of New Jersey, as a securities holding corporation. The company's assets consist principally of securities owned in subsidiary companies, through which the Copper Range Consolidated Co. is the second largest copper producer of the Lake Superior district. Its production includes the total output of the Baltic and Trimountain mines and one-half the output of the Champion mine, the other one-half belonging to the St. Mary's Mineral Land Co., which is the joint owner, with the Copper Range Consolidated Co., of the shares of the Champion Copper Co. The company owns and controls all the stock of the Copper Range Railroad Co. Company owned as of January 1, 1913, 99,659 of the 100,000

shares of outstanding stock of the Baltic Mining Co.; 99,699 of the 100,000 shares of the Copper Range Co.; 99,345 of the 100,000 shares of the Trimountain Mining Co.; 16,392 of the 42,443 shares (the remaining 26,051 shares being owned by the Copper Range Co.) of the stock of the Copper Range Railroad Co.; and 93,470 of the 100,000 shares of the Atlantic Mining Co. In addition the Copper Range Consolidated Co. owns $870,000 face value of bonds of the Copper Range Railroad. Through the Copper Range Co., the Copper Range Consolidated Co. controls $1,250,000 (one-half) of the stock of the Champion Copper Co., and through the Baltic and Trimountain companies controls $190,000 of the stock of the Michigan Smelting Co., the former owning $80,000 and the latter $110,000 of the Smelting Co.'s stock.

Capital stock.—Authorized, $40,000,000; outstanding, $39,369,200; par, $100. Dividends have been paid (quarterly, January 1) as follows: 1905, 3 per cent; 1906, 5 per cent; 1907, 8 per cent; 1908, 1909, 1910, and 1911, 4 per cent each; 1912, 2 per cent; January, April, and July, 1913, ¾ per cent each. Total dividends paid to December 31, 1912, $12,902,249. No bonds.

Combined production of operating companies, years ended Dec. 31.

	1911	1912
Tons of rock stamped	1,779,072	1,784,402
Average yield refined copper	20.87	21.07
Copper produced ..... pounds..	37,130,292	37,584,647
Average price per pound ..... cents..	12.54	16.16
Average cost per pound ..... do....	9.74	10.51

Consolidated statement of operating companies, years ended Dec. 31.

	1911	1912
Sales of copper and interest	$4,655,647	$6,084,202
Mining expenses, including smelting, freight, marketing, etc	3,447,100	3,661,837
	1,208,547	2,422,364
Houghton Co., taxes	163,373	164,157
Total income from mining	1,045,174	2,258,207
Other income	53,532	144,160
Net income	1,098,706	2,402,367
Deduct interest, taxes, and general expenses of Copper Range Consolidated Co..	66,851	83,992
Deduct one-half of net mining profit of Champion Copper Co., which belongs to the St. Mary's Mineral Land Co	227,294	625,810
Balance of net income	804,561	1,692,566

Receipts and disbursements, year ended Dec. 31, 1912.

Receipts.	Amount.	Disbursements.	Amount.
Balance, previous year	$315,552	Michigan Smelting Co	$39,955
Baltic Co. dividends	697,613	Taxes	7,771
Trimountain Co. dividends	298,065	Interest	39,085
Copper Range Co. dividends	448,646	Other expenses	37,136
Received from various companies	488,282	Dividends	788,429
Dividend received in capital stock issued, but which remains unexchanged	3,267	Notes payable	925,000
		Accounts receivable	2,397
Notes payable	43,846	Cash on hand Dec. 31	455,499
Total	2,295,271	Total	2,295,271

General balance sheet, Dec. 31.

	1911	1912
ASSETS.		
Treasury stock[1]	$79,100	$79,100
Stocks owned[2]	37,865,400	37,890,100
Copper Range R. R. Co.:		
Bonds at par	870,000	870,000
Stock at par	1,639,200	1,639,200
Notes receivable	260,411	183,787
Accounts receivable	6,000	8,396
Copper Range electric plant	74,186	68,823
General exploration	672,331	672,331
Cash	315,874	455,499
Total	41,782,502	41,867,236
LIABILITIES.		
Capital stock	39,344,500	39,369,200
Notes payable	2,025,000	1,100,000
United Metals Selling Co.	300,000	500,000
Deposits:		
Trimountain Mining Co.	21,442	50,214
Copper Range Co.	25,206	125,317
Atlantic Mining Co.	.....	47,200
Michigan Smelting Co.	30,806	.....
Copper Range R. R. Co.	.....	20,677
Stock suspense	.....	63
Accounts payable	18,183	62,030
Surplus	17,365	592,535
Total	41,782,502	41,867,236

[1] 791 shares of Copper Range Consolidated Co. held by the treasurer for exchange for the outstanding shares of the Baltic Mining Co. and the Copper Range Co.

[2] Consists of 99,659 shares of the Baltic Mining Co., 99,699 shares of the Copper Range Co., 99,345 shares of the Trimountain Mining Co., and 93,470 shares of Atlantic Mining Co.

Officers.—Wm. A. Paine, president; R. T. McKeever, vice president, Boston; F. W. Denton, vice president, Painesdale, Mich.; Frederic Stanwood, secretary and treasurer, Boston.

Directors.—The foregoing and J. H. Brooks; Charles J. Paine, jr., Boston; S. L. Smith, Detroit; F. McM. Stanton, New York; J. R. Turner, Jersey City.

Companies Controlled by Copper Range Consolidated Co.

ATLANTIC MINING CO.

Controlled by stock ownership. Incorporated July 18, 1872, in Michigan. Owns extensive copper mining and milling property in Houghton County, Mich.

Capital stock.—Authorized, $2,500,000, of which $1,180,000 has been paid in; par, $25; paid in, $11.80. Practically all owned by Copper Range Consolidated Co.

Receipts and expenditures, year ended December 31, 1912.—Rents, custom work, etc., at mine, $121,250; other income, $10,592; total, $131,842. Deduct: Operating expenses, $81,362; taxes, insurance, etc., $9,374; total, $90,736. Surplus for year, $41,106; surplus forward, $174,826; total surplus, $215,932.

General balance sheet, December 31, 1912.—Indebtedness at mine, $325; accounts payable, $163; surplus, $215,932; total, $216,420. Contra: Cash in Boston, $68,497; Michigan Smelting Co. stock, $40,000; cash and supplies at mine, $106,384; merchandise invoices at mine audited for payment, $838; copper delivered, not paid for, $701; total, $216,420.

Officers.—W. A. Paine, president; Frederic Stanwood, secretary and treasurer, Boston.

Directors.—The foregoing and F. P. Son, J. H. Blodgett, Boston; Samuel L. Smith, Detroit; J. R. Stanton, J. W. Hardley, New York.

BALTIC MINING CO.

Controlled by stock ownership. Incorporated in December, 1897, in Michigan. Property, 800 acres in the Keweenaw copper belt, Houghton County, Mich. There are five shafts, numbered from south to north. Three shafts are producing, these being Nos. 2, 3, and 4 shafts, with a total depth of 2,257 feet, 2,526 feet, and 2,457

feet, respectively, and bottom levels of the twenty-second, twenty-sixth, and twenty-fifth, respectively. No. 1 shaft was abandoned at a depth of 219 feet. Production was begun in August, 1899. During 1912, 464 feet of shaft sinking, 10,547 feet of drifting, 679 feet of crosscutting, and 1,772 feet of raising was accomplished. Equipment consists of a compressor plant; boiler plant, with four 250-horsepower boilers; a 360-foot coal trestle of 5,000 tons capacity; electric light plant, machine shop, etc., and more than 100 dwellings; also a stamp mill at Redridge, on Lake Superior, with a capacity of 5,000 tons daily.

Capital stock.—Authorized and issued, $2,500,000, of which $2,491,475 is owned by the Copper Range Consolidated Co.; par, $25. Dividends in recent years have been paid as follows: 1905, 69.4 per cent; 1906, 77.7 per cent; 1907, 55.5 per cent; 1908, 50 per cent; 1909 and 1910, 55.5 per cent each; 1911, 20 per cent; 1912, 28 per cent.

Statement of production, years ended Dec. 31.

	1911	1912
Tons of rock hoisted	760,473	705,281
Tons of rock stamped	696,795	652,433
Copper produced, pounds	15,370,449	13,373,961
Pounds of copper per ton stamped	22.06	20.50

Receipts and disbursements, years ended Dec. 31.

	1911	1912
Sales of copper, etc	$1,927,036	$2,165,350
Operating expenses and taxes	1,396,821	1,467,957
Mining profit	530,215	697,393
Surplus for year	530,215	697,393
Previous surplus	278,497	308,713
Dividends	500,000	700,000
Balance surplus	308,712	306,106

General balance sheet.—Copper Range Consolidated Co., $174,638; indebtedness at mine, $97,138; mine drafts in transit, $91,277; accounts payable, $7,527; surplus, $306,106; total, $676,686. Contra: Cash in Boston, $4,455; copper on hand, $295,836; United Metals Selling Co. copper delivered and not paid for, $166,636; Michigan Smelting Co. stock, $80,000; cash and supplies at mine, $126,590; accounts receivable, $2,980; insurance suspense, $187; total, $676,686.

Officers.—William A. Paine, president; Frederic Stanwood, secretary and treasurer, Boston. Directors: William A. Paine, J. H. Brooks, R. T. McKeever, Thomas S. Dee, Boston; S. L. Smith, Detroit.

CHAMPION COPPER CO.

Controlled by stock ownership jointly with St. Mary's Mineral Land Co. Incorporated October 14, 1899, in Michigan. Property, 1,240 acres near Copper Range and Trimountain, Houghton, Mich. Total depth of shafts: Shaft "B," 2,356 feet; "C," 2,334 feet; "D," 2,168 feet; "E," 2,388 feet. During 1912, 429 feet of shaft sinking, 9,343 feet of drifting, 1,209 feet of cross cutting, and 1,740 feet of raising was accomplished. Equipment includes hoists of 3,000 feet capacity, electric plant, stamp mill, mine buildings, water-supply system, and a village of 444 dwellings. The stamp mill at Freda, on Lake Superior, has four simple heads and two compound heads. Power for the mill is supplied by a 500-horsepower engine, with a 180-horsepower engine in reserve. The boiler house has four 200-horsepower boilers. The pump house has a 20,000,000 gallon pump; water taken from the lake through a 1,020-foot tunnel.

Capital stock.—Authorized and issued, $2,500,000, of which one-half is owned by Copper Range Co. and one-half by St. Mary's Mineral Land Co.; par, $25. Dividends have been paid as follows: 1903, 12 per cent; 1904, 8 per cent; 1905, 40 per cent; 1906, 48 per cent; 1907, 40 per cent; 1908, 20 per cent; 1909, 32 per cent; 1910, 36 per cent; 1911, 20 per cent; 1912, 44 per cent.

Statement of production, years ended Dec. 31.

	1911	1912
Tons of rock hoisted	787,416	804,944
Tons of rock stamped	734,392	765,306
Copper produced, pounds	15,639,426	17,225,508
Pounds of copper per ton stamped	21.30	22.51

Receipts and disbursements, years ended Dec. 31.

	1911	1912
Sales of copper, etc	$1,962,730	$2,785,411
Operating expenses and taxes	1,508,141	1,533,791
Mining profit	454,588	1,251,619
Surplus for year	454,588	1,251,619
Previous surplus	837,668	792,256
Dividends	500,000	1,100,000
Balance surplus	792,256	943,876

Assets and liabilities, Dec. 31.

	1911	1912
ASSETS.		
Cash	$155,210	$82,609
Copper on hand	406,713	502,868
United Metals Selling Co., copper delivered, not paid for	145,671	176,694
Michigan Smelting Co., stock	110,000	110,000
Accounts receivable	26,736	40,849
Cash and supplies at mine	149,632	203,292
Insurance suspense	854	697
Total	994,878	1,116,409
LIABILITIES.		
Indebtedness at mine	89,533	100,344
Mine draft in transit	89,103	62,199
Accounts payable	23,986	9,990
Surplus	792,256	943,876
Total	994,878	1,116,409

Officers.—William A. Paine, president; Charles J. Paine, jr., vice president; Frederic Stanwood, secretary and treasurer, Boston. Directors: William A. Paine, George P. Gardner, N. H. Stone, C. J. Paine, jr., Richard Olney, Boston; S. L. Smith, Detroit; F. W. Denton, Painesdale, Mich.

COPPER RANGE CO.

Controlled by stock ownership. Incorporated in 1889, in Michigan. Property 9,360 acres south of Baltic mine and miscellaneous land comprising 441 acres with 4 miles frontage on Lake Superior. Company owns 50,000 shares of Champion Copper Co. stock and 26,051 shares of Copper Range Railroad Co. stock.

Capital stock.—Authorized and issued, $2,500,000, of which the Copper Range Consolidated Co. owns $2,492,475; par, $25. Dividends in 1905, $3 per share; 1906, $6; 1907, $4.50; 1908, $3; 1909, $6; 1910, $4.50; 1911, $3; 1912, $4.50.

Receipts and expenditures, year ended December 31, 1912.—Balance from previous year, $26,499; dividends received, $550,000; interest received, $3,415; other receipts, $2,491; total, $582,405. Expenditures: Taxes, $3,649; general expenses at Houghton and Boston, $1,556; timberlands, $11; dividends, $450,000; cash, $127,188; total, $582,405.

General balance sheet, Dec. 31.

	1911	1912
ASSETS.		
Lands on mineral range	$1,287,658	$1,287,658
Timberlands	92,336	92,348
Stocks owned	3,855,100	3,855,100
Cash	26,499	127,188
Total	5,261,593	5,362,294
LIABILITIES.		
Capital stock	2,300,000	2,300,000
Accounts payable	7,751	9,661
Profit and loss	2,953,842	3,052,633
Total	5,261,593	5,362,294

Officers.—William A. Paine, president; C. A. Snow, vice president; Frederic Stanwood, secretary and treasurer, Boston. Directors: The foregoing and R. T. McKeever, Boston; F. W. Denton, Painesdale, Mich.

TRIMOUNTAIN MINING CO.

Controlled by stock ownership. Incorporated 1899 in Michigan. Property, 1,120 acres lying south of Baltic and north of Champion in Houghton County, Mich. Total depth of shafts: No. 2, 2,742 feet; No. 3, 2,267 feet; No. 4, 2,191 feet. During 1912 263 feet of shaft sinking, 7,746 feet of drifting, 401 feet of crosscutting, and 1,770 feet of raising was accomplished. Equipment at each shaft includes a 2,500-horsepower hoist, with capacity for raising 6-ton skips from 1-mile depth. Mine buildings include machine shop, carpenter shop, smithy, and warehouse. There is a 35-drill air compressor at No. 2 shaft, with a condensing plant in a separate building adjoining. The power plant at No. 3 shaft includes a battery of water-tube boilers and a 4,500-foot air compressor, running 65 drills, 10 pumps, and sundry pneumatic machinery. The stamp mill occupies a 100-acre mill site at Beacon Hill, on Lake Superior, and has four compound heads, a 300-horsepower engine, and six 250-horsepower and two 200-horsepower boilers. The mill pump house has a 20,000,000-gallon pump.

Capital stock.—Authorized and issued $2,500,000, of which $2,000,000 paid in; par, $25, of which $20 is paid in. Copper Range Consolidated Co. owns 99,345 shares of the stock. Company paid $300,000 in dividends in 1903, $500,000 in 1908, $150,000 in 1910, and $300,000 in 1912.

Statement of production, years ended Dec. 31.

Year.	Copper produced.	Price received per pound.	Total cost per pound.
	Pounds.	*Cents.*	*Cents.*
1904	10,211,230	13.67	.....
1905	10,476,462	15.47	10.93
1906	9,507,933	18.85	11.40
1907	8,190,711	17.28	11.82
1908	6,034,908	13.39	12.50
1909	5,282,404	13.89	13.89
1910	5,694,868	12.74	12.17
1911	6,120,417	12.54	11.55
1912	6,980,713	16.16	11.73

Receipts and disbursements, years ended Dec. 31.

	1911	1912
Sales of copper, etc	$768,595	$1,132,718
Operating expenses and taxes	708,224	824,246
Mining profit	60,370	308,472
Surplus for year	60,370	308,472
Previous surplus	462,551	522,922
Dividends		300,000
Balance surplus	522,922	531,394

Assets and liabilities, December 31, 1912.—Indebtedness at mine, $99,504; mine drafts in transit, $40,681; accounts payable, $4,299; surplus, $531,394; total, $675,879. Contra: Cash at Boston, $50,925; copper on hand, $215,555; United Metals Selling Co. copper delivered, not paid for, $31,174; Michigan Smelting Co. stock, $110,000; cash and supplies at mine, $211,871; accounts receivable, $55,954; insurance suspense, $400; total, $675,879.

Officers.—William A. Paine, president; Frederic Stanwood, secretary and treasurer, Boston. Directors: The foregoing and J. H. Brooks, Charles A. Snow, R. T. McKeever, Boston; Fred. W. Denton, Painesdale, Mich.; J. R. Stanton, New York.

FRANKLIN MINING CO.

Incorporated April 3, 1857, in Michigan. Owns copper mining property at Hancock, Houghton County, Mich., on the same lodes as the Calumet & Hecla mines and some of the oldest existing Lake Superior copper mines. Stamp mill located at Portage Lake. Owns over 90 per cent of stock of Rhode Island Copper Co. See appended statement.

Production and development, year 1912.—During the year 1,710,651 pounds of copper were produced and sold at 16.79 cents per pound. There were 184,057 tons of rock hoisted and 176,462 tons stamped. Development during the year totaled 5,134 feet.

Capital stock.—Authorized, $5,000,000; par, $25; outstanding December 31, 1912, 166,358 shares on which $14.20 per share had been paid in. Assessment of $2 per share was paid October 18, 1912. No dividends paid since January, 1894.

Treasurer's statement, December 31, 1912.—Cash and accounts receivable, $138,340; fuel and supplies at mine, $51,058; assessment, October 18, 1912, $332,716; interest, $5,964; copper sold, $287,286; other receipts, $1,043; total, $816,407. Contra: Accounts payable, $179,761; balance due from Stephen R. Dow & Co., $81,394; balance due from Rhode Island Copper Co., $99,819; mine liabilities omitted in 1911, $661; mine expenses, $365,026; smelter and general expenses, $47,907; total, $774,568. Surplus, December 31, 1912, $41,839.

Assets and liabilities, Dec. 31.

[Exclusive of mine and plant.]

Assets.	1911	1912	Liabilities.	1911	1912
Cash and accounts receivable.	$133,168	$63,142	Drafts outstanding	$37,169	$20,560
			Notes payable	88,000	105,560
Copper sold	5,173	62,106	Accounts payable	53,793	67,546
Assessment No. 2 unpaid		42,560			
Fuel	25,363	26,115			
Supplies	25,695	41,022			
Total	189,399	234,945	Total	179,762	193,106
			Balance of assets	9,637	41,839

Officers.—R. M. Edwards, president and general manager, Houghton, Mich.; A. L. Wyman, secretary, Henry Tolman, treasurer, Boston. Directors: R. M. Edwards, Houghton, Mich.; I. J. Sturgis, Boston; H. M. Howard, Brookline, Mass.; Henry Tolman, Newton, Mass.; C. G. Rice, S. J. Jennings.

HANCOCK CONSOLIDATED MINING CO.

Incorporated June 11, 1906, in Michigan. Property comprises 992 acres, including the old Hancock mine, the Condon tract, and land secured from St. Marys Mineral Land Co. The Hancock mine, between 1861 and 1885, had produced 2,854 tons of fine copper.

Capital stock.—Authorized, $5,000,000, of which $2,800,000 in treasury; par, $25, only part paid in.

Receipts and disbursements, year ended December 31, 1912.—Receipts from assessments, $182,977; loan, $50,000; total, $232,977. Disbursements: Construction and development, $217,765; taxes, $31,658; interest, $2,237; general expenses, $15,883; total, $267,543. Excess of disbursements, $34,566.

General balance sheet, December 31.

Assets.	1911	1912	Liabilities.	1911	1912
Treasury stock	$3,000,000	$2,800,000	Capital stock	$5,000,000	$5,000,000
Real estate	594,698	594,698	Interest	14,314	12,077
Expense	264,685	312,226	Accounts and notes payable	88,549	134,515
Construction and development	1,264,215	1,481,980	Refined copper	94,687	94,687
Cash	41,559	6,577			
Supplies	24,211	19,666			
Assessments	6,260	23,283			
Accounts receivable	1,922	2,849			
Total	5,197,551	5,241,279	Total	5,197,551	5,241,279

Officers: J. D. Cuddihy, president; Thomas Hoatson, vice president; J. H. Hicok, secretary and treasurer; John L. Harris, general manager. Directors: J. D. Cuddihy, Thomas Hoatson, James Hoatson, S. B. Harris, Allen F. Rees, Frederic W. Nichols.

HOUGHTON COPPER CO.

Controlled by stock ownership. Incorporated in 1909, in Michigan. Property comprises 160 acres, located in the Houghton district, Mich., on the Superior lode. Development work is being prosecuted by shaft sinking and drifting. Total development to January 1, 1913, about 2,946 feet.

Capital stock.—Authorized, $2,500,000; par, $25; issued, 67,000 shares, on which $6 per share paid up. The St. Marys Mineral Land Co. owns 37,222 shares of the stock.

Income account, year ended December 31, 1912.—Receipts: Assessment No. 1, $63,255; miscellaneous, $219; total, $63,474. Expenditures: Mine expenses, $42,164; taxes, $2,732; interest and insurance, $998; Boston office expenses, $3,507; total, $49,400. Surplus, $14,074.

Assets and liabilities, December 31, 1912.—Assets: Cash, $1,700; supplies, $4,630; accounts receivable, $57; total, $6,387. Liabilities: Accounts payable at Boston, $4,000; accounts payable at mine, $5,741; total, $9,741. Excess of liabilities, $3,353.

Officers: Charles J. Paine, jr., president; George P. Gardner, vice president; A. E. Coe, secretary and treasurer, Boston; L. L. Hubbard, general manager, Houghton, Mich. Directors: George P. Gardner, Charles J. Paine, jr., N. H. Stone, Boston; James P. Edwards, F. W. Nichols, Houghton, Mich.

LAKE COPPER CO.

Incorporated November 28, 1905, in Michigan. Property consists of 2,010 acres, adjoining the Adventure, in Ontonagon County, Mich., including 1,150 acres of mineral land, 680 acres of timber lands, and 180 acres of cutover lands. Company purchased 20 acres immediately east of the shaft from the St. Mary's Mineral Land Co., to provide room for a surface plant, the purchase carrying with it mineral rights to a depth of 100 feet. The bulk of the mineral property formerly was a part of the Belt mine, first opened in 1848, and taken over in 1882 by the Belt Mines Co. (Ltd.).

During fiscal year 1911–12, 12,653 feet of development work was done, compared with 9,831 feet in previous year. Production was started in April, 1912, with monthly average of about 115,000 pounds copper. Mill recovery shows about 26 pounds of mineral per ton.

Capital stock.—Authorized and outstanding, 100,000 shares ($2,500,000); par, $25, of which $3 per share ($300,000) paid in.

Receipts and disbursements, year ended April 30, 1912.—Receipts: Cash on hand May 1, 1911, $326,952; sale of copper, $39,338; miscellaneous receipts, $6,070; interest on bank deposits, $9,151; total receipts, $381,511. Expenditures: Expenditures at mine, $311,076; all other expenses, $10,972; total expenditures, $322,048. Cash on hand April 30, 1912, $59,463.

Assets and liabilities, April 30, 1912.—Assets: Cash in bank, $59,463; supplies at mine, $17,959; copper on hand, $30,380; total, $107,802. Liabilities: Accounts payable (current indebtedness at mine), $20,289. Balance of assets, $87,513.

Officers.—W. A. Paine, president, Boston, Mass.; John H. Rice, vice president, Houghton, Mich.; R. H. Gross, secretary and treasurer, Boston, Mass.; C. K. Hitchcock, jr., manager, Lake Mine, Mich. Directors: John H. Rice, R. C. Pryor, Houghton, Mich.; W. A. Paine, R. H. Gross, G. L. Stone, W. F. Fitzgerald, R. T. McKeever, Boston, Mass.

MASS CONSOLIDATED MINING CO.

Incorporated in 1899, in Michigan, to operate copper properties of about 3,000 acres in mass, Ontonagon County, Mich. The mine is stated to be notably rich in mass copper and its physical equipment is adequate. There are three shafts with respective depths of 1,757 feet, 1,857 feet, and 1,100 feet. The power plant between A and B shafts has a double hoist, a 50-drill air compressor, a dynamo for electric light, and two 250-horsepower boilers.

The stamp mill, situated on Keweenaw Bay, on an arm of Lake Superior, 34 miles northeast of the mine, is equipped with two heads of about 1,200 tons capacity. The boiler house has two 200-horsepower and one 350-horsepower boilers. The pump house has a 16,000,000-gallon pump, fed from a 12-foot by 30-foot well, connected with a tunnel running 300 feet under the bed of the bay to the intake.

In 1911 the company completed the purchase of the Evergreen Bluff Mining Co.'s lands, comprising about 2,000 acres, and which had divided the southern half of the Mass property.

A special meeting of the stockholders was held in 1912, and it was voted to sell a portion of the company's lands to a new company, the stock of which was to be offered to stockholders of the Mass company, but condition of the stock market has been such that no attempt has been made so far to carry out the plan.

Capital stock.—Authorized, $2,500,000; paid in, $2,300,000; par, $25. No bonds. No dividends.

Production, years ended Dec. 31.

Year.	Refined copper.	Average price received.	Pounds copper per ton of rock.	Number feet new openings.
	Pounds.	*Cents.*		
1906	2,106,739	19.52	11.34	9,834
1907	2,078,677	18.26	10.16	3,354
1908	1,766,930	13.50	10.32	1,085
1909	1,723,436	13.613	12.36	2,464
1910	1,321,885	12.503	14.59	4,335
1911	1,326,898	12.76	17.58	7,166
1912	2,045,006	17.02	15.39	4,892

Income account, years ended Dec. 31.

Year.	Total receipts.	Expenses and taxes.	Construction, exploring and real estate.	Total expended.	Deficit for year.
1906	$416,631	$477,941	$42,387	$520,328	$103,697
1907	388,171	433,280	14,265	447,545	59,374
1908	240,520	261,433	25,978	287,411	46,891
1909	243,749	271,361	17,393	288,754	45,005
1910	365,749	186,289	49,390	235,697	sur. 130,070
1911	494,834	211,002	253,122	464,124	sur. 30,710
1912	349,355	187,798	182,919	370,717	21,362

Assets and liabilities, Dec. 31.

Assets.	1911	1912	Liabilities.	1911	1912
Cash on hand	$13,736	$17,429	Notes payable	$30,400	$65,400
Accounts receivable	15,299	18,239	Accounts payable	30,139	47,026
Assessments	16,688	.....	Pay roll	10,888	16,758
Supplies at mine	17,649	27,820	Evergreen Trust	.....	1,634
Supplies at mill	18,681	17,383	Compensation fund	.....	1,371
Copper on hand	20,303	61,160	Amount due certificate holders from sale of unpaid assets	219	495
			Total	71,646	132,684
			Surplus of assets	30,710	9,347
Total	102,356	142,031	Total	102,356	142,031

Officers: J. W. Linnell, jr., president; T. O. Nicholson, vice president; W. A. Bancroft, secretary and treasurer. Directors: The foregoing and D. A. Carrick, James B. Hill, William F. Fitzgerald, F. J. Schultheis, F. L. Maguire, and E. W. Walker.

MOHAWK MINING CO.

Incorporated in November, 1898, in Michigan. Company owns a tract of 800 acres in sections 27, 28, 33, 34, township 57 north, range 32 west, in Keweenaw County, 4 miles northeast of the property of the Calumet & Hecla Mining Co. Company has a mill site of 140 acres, with a frontage of three-fourths of a mile on Traverse Bay, Lake Superior, about one-fourth of a mile from mouth of the Tobacco River. The mineral lands aggregate 800 acres, forming an irregular tract with its axis on the strike of the lode. Development is by five shafts and underground openings. The Mohawk mill at Gay has four stamps, each head with a daily capacity of 500 tons, working on the rock of the Kearsarge lode. The equipment includes the most modern machinery, also a town named in honor of Joseph E. Gay, with dwellings for employees, streets, water mains, hydrants, etc. An 1,800-foot spur to a connection with the Traverse Bay Railroad was constructed in 1909, also a dam to furnish sufficient water for the needs of the plant. Development work in 1905 showed total openings of 10,812 feet; 1906, 13,314 feet; 1907, 11,043 feet; 1908, 12,669 feet; 1909, 13,691 feet; 1910, 14,978 feet; 1911, 15, 459 feet; 1912 (634 feet shaft sinking and 14,768 feet drifting and crosscutting), 15,402 feet.

Capital stock, $2,500,000; par, $25.—Dividends have been paid as follows: 1906, $5 per share; 1907, $9; 1908, $2.50; 1909, $3; 1910, $2; 1911, $1.75; 1912, $3.50; February 1, 1913, $3; payments, semiannually, F & A 1.

Operating statistics, years ended Dec. 31.

Year.	Refined copper.	Total cost, including construction, per pound.	Price received per pound.
	Pounds.	*Cents.*	*Cents.*
1906	9,352,252	11.54	19.60
1907	10,107,266	11.747	15.66
1908	10,295,881	10.755	13.43
1909	11,248,474	11.207	13.20
1910	11,412,066	10.965	11.44
1911	12,091,056	10.399	12.63
1912	11,995,598	10.61	16.08

Income account, years ended Dec. 31.

Year.	Gross receipts.	Expenses.	Mining profit.	Construction charges.	Net profit.	Dividends.	Surplus for year.
1907	$1,585,787	$1,084,029	$501,758	$103,353	$398,405	$900,000	$557,822
1908	1,384,165	1,085,590	298,575	21,796	276,779	250,000	584,600
1909	1,484,292	1,248,048	236,244	12,553	223,691	300,000	508,291
1910	1,493,816	1,251,365	242,451	54,368	188,083	200,000	496,374
1911	1,527,108	1,226,322	300,786	31,280	269,506	175,000	590,881
1912	1,929,428	1,264,177	665,251	8,815	656,436	350,000	897,316

Assets and liabilities, Dec. 31.

Assets.	1911	1912	Liabilities.	1911	1912
Cash in bank	$16,099	$14,676	Indebtedness at mine	$158,449	$161,403
Cash in trust company	150,000	275,000	Accounts payable	14,555	19,141
Copper on hand, sold	432,536	599,947			
Cash and supplies at mine	85,250	108,237	Total	173,004	180,544
Stock in Michigan Smelting Co.	80,000	80,000			
			Excess of assets over liabilities	590,881	897,316
Total	763,885	1,077,860			

Officers: Joseph E. Gay, president; J. R. Stanton, treasurer; J. W. Hardley, secretary, New York. Directors: The foregoing and W. A. Paine, Boston, Mass.; Fred Smith, Kearsarge, Mich.

QUINCY MINING CO.

Incorporated originally by special charter of the State of Michigan March 30, 1848. Charter expired March 6, 1878, when the company was reorganized under the existing mining law of Michigan. Its business is that of copper mining and smelting, and it owns and works one of the richest copper-mine properties in the Portage Lake district, Houghton County, upper Michigan. Purchased the mine and mill location of the Franklin Mine Co., adjoining the company's property, in 1908.

In 1910 the company purchased 800 acres of mineral land from the St. Mary's Canal Mineral Land Co., immediately adjoining the company's present territory and carrying the extensions of the Pewabic vein. The cost of the property was $600,000.

The stamp mills, two in number, are at Mason, on Torch Lake, 6 miles from the mine, and have a combined stamping capacity of about 5,000 tons daily. The power house at the mills is equipped with four 250-horsepower water-tube boilers. The pumps include one 20,000,000-gallon pump, and three pumps with a combined capacity of 21,000,000 gallons daily. Water is taken from a 100-foot tunnel driven under the bed of the lake. A 440-foot tunnel, carrying steam and water pipes, connects the mills, boiler houses, and pump houses. The smelter is situated one-half mile from the mine, on the shore of Portage Lake. The works, in addition to treating the Quincy produce, do a custom business.

Capital stock.—Authorized, $3,750,000; outstanding, $2,750,000; par, $25. Dividends have been paid in recent years as follows: 1900, 36 per cent; 1901, 36 per cent; 1902, 28 per cent; 1903, 22 per cent; 1904, 20 per cent; 1905, 24 per cent; 1906, 50 per cent; 1907, 54 per cent; 1908, 18 per cent; 1909, 16 per cent; 1910, 20 per cent; 1911, 16 per cent; 1912, 20 per cent; March, 1913, 6 per cent; June, 1913, 5 per cent; payments quarterly. Total dividends paid to January 1, 1913, $20,430,000.

Production years ended Dec. 31.

Year.	Refined copper.	Year.	Refined copper.
	Pounds.		*Pounds.*
1904	18,343,160	1909	22,511,984
1905	18,827,557	1910	22,517,014
1906	16,194,838	1911	22,252,943
1907	19,796,058	1912	20,634,800
1908	20,600,361		

Income account, years ended Dec. 31.

Year.	Gross income.	Operating expenses, etc.	Net profit.	Other income.	Previous surplus.	Total surplus.	Dividends.	Balance.
1905	$2,981,121	$1,905,523	$1,075,198	$29,283	$946,841	$2,051,325	$600,000	$1,451,325
1906	3,099,011	1,963,437	1,135,574	27,411	.....	1,250,000	.....	1,250,000
1907	3,717,501	2,442,359	1,275,152	21,520	1,220,532	2,517,204	1,485,000	1,032,204
1908	2,796,239	2,358,464	437,766	16,394	1,032,204	1,486,364	495,000	991,364
1909	3,084,819	2,478,716	556,094	12,756	991,364	1,560,214	440,000	1,120,214
1910	2,974,086	2,360,125	613,961	28,732	1,120,215	1,762,908	550,000	[1] 1,062,908
1911	2,854,804	2,365,067	489,737	17,830	1,062,997	1,570,504	440,000	[1] 979,589
1912	3,381,587	2,436,052	945,535	15,245	972,499	1,933,278	550,000	[1] 1,233,278

[1] After deducting $150,000 in 1910, $158,005 in 1911, and $150,000 in 1912, on account of land purchased from St. Mary's Canal Mineral Land Co.

Assets and liabilities, December 31, 1912, exclusive of real estate, mine plant, and supplies in use.—Cash, copper, and investments, $980,613; accounts receivable, $212,030; total, $1,192,643. Contra: Mine drafts unpaid, $3,893; accounts payable in New York, $17,325; accounts payable at mine, $236,461; accounts payable at smelting works, $9,318; total, $266,997; leaving $925,646; add supplies, etc., and accounts receivable at mine, $281,083; supplies, etc., and accounts receivable at smelting works, $26,549; balance of assets, $1,233,278.

Officers.—William R. Todd, president; W. Parsons Todd, vice president; W. A. O. Paul, secretary and treasurer. Directors: W. Parsons Todd, W. R. Todd, Walter P. Bliss, Isaac H. Meserve, Charles J. Devereaux, Otto Kirchner (of Michigan), Jas. L. Bishop, W. M. Belcher, John M. Longyear.

WINONA COPPER CO.

Incorporated November 3, 1898, in Michigan; owns an extensive mineral property of about 1,500 acres in Houghton County, Mich.; also timber rights to 1,768 acres, situated about 5 miles from the mine; also owns the entire capital stock of the King Philip Copper Co. The mine has two working shafts. Company has electric pumps and runs about 10 drills, and also has a 2-head stamp mill. Development, year ended December 31, 1912, shows drifting, 3,060 feet; crosscuts, 114 feet.

Production, year ended December 31, 1912.—Rock stamped, 181,148 tons; product of mineral, 3,586,520 pounds; product of refined copper, 2,307,237 pounds; yield of mineral per ton of rock stamped, 19.79 pounds; yield of copper per ton of rock stamped, 12.7367 pounds; price received per pound for copper, 16.306 cents.

Capital stock.—Authorized, $5,000,000; 166,667 shares issued; par, $25, of which paid up, $23 per share. Of the stock, 66,666 shares were issued in exchange for King Philip Copper Co. stock on the basis of two Winona shares for three of King Philip. No dividends.

Income account, years ended Dec. 31.

Year.	Sales of copper.	Other income.	Total income.	Mine expenses.	Smelting and marketing.	General expenses and taxes.	Deficit for year.
1906	$63,326	$1,175	$64,501	$276,140	$3,350	$13,501	$228,490
1907	219,332	3,086	222,418	383,375	15,419	13,824	190,200
1908	1,456	14,979	16,435	196,982	1,038	13,106	196,147
1909	.....	265,774	265,774	100,308	[1] 56,500	14,041	[2] 94,925
1910	.....	203,157	203,157	98,379	[1] 138,000	17,598	50,820
1911	159,890	[3] 315,906	475,796	278,547	38,638	11,797	[2] 146,814
1912	376,220	18,094	394,314	429,540	24,422	25,132	84,780

[1] Advanced to stamp mill. [2] Surplus. [3] Includes $185,421 from assessments.

Assets and liabilities, Dec. 31.

	1911	1912
ASSETS.		
Cash in bank	$45,186	$27,881
Accounts receivable	3,275	4,224
Supplies and cash at mine	81,125	81,856
Copper on hand	65,289	63,718
Total	194,875	177,679
LIABILITIES.		
Accounts payable	48,061	115,645
Excess of assets	146,814	62,034
Total	194,875	177,679

Officers.—Charles J. Paine, jr., president; Nathaniel H. Stone, vice president, E. B. O'Connor, secretary and treasurer, Boston. Directors: William A. Paine; James H. Seager, Charles J. Paine, George P. Gardner, Walter Hunnewell, Nathaniel H. Stone, Charles J. Paine, jr.

KING PHILIP COPPER CO.

Controlled by stock ownership. Incorporated November 13, 1905, in Michigan. Property, 1,040 acres, in Houghton and Ontonagon Counties, Mich. The mine is opened by two shafts on the Winona lode, which averages about 20 feet in width. The shafts are equipped with 1,200-foot hoists. Power house contains a battery of two 200 horsepower boilers, 6 drill and 15 drill air compressors, and a powerful 3-stage air compressor. Company recently erected a stamp mill in conjunction with the Winona Copper Co.

Capital stock.—Authorized and issued, $2,500,000; par, $25, of which $13 has been paid in. All owned by Winona Copper Co.

Officers.—Charles J. Paine, jr., president; George P. Gardner, vice president; Edward B. O'Connor, secretary and treasurer. Directors: E. V. R. Thayer, George P. Gardner, Walter Hunnewell, Rufus R. Goodell, Nathaniel H. Stone, Charles J. Paine, jr.

WOLVERINE COPPER MINING CO.

Incorporated in 1890, in Michigan. Property consists of 320 acres, of which 280 acres are freehold and 40 acres adjoining mineral rights, in Houghton County, Mich., the property carrying 3,100 feet of the strike of the Kearsarge amygdaloidal bed, on which the mine is opened. The Kearsarge bed averages about 17 feet in width on the Wolverine property.

Ore is blocked out for about six years' production, and an estimate of 20 to 25 years' life is given the mine. About 20 power drills are employed in stoping and 10 in opening work. There are 5 Knowles electric pumps in use, and tramcars are used for underground rock handling.

The principal mine buildings are at No. 4 shaft, where there are 20-drill and 22-drill air compressors. The company owns a large number of dwellings.

The mill, completed in 1902, is situtated 13 miles from the mine, near the mouth of Tobacco River, on Traverse Bay, Lake Superior, adjoining the Mohawk, both mills being served by a single pump, and managed by a joint superintendent. Capacity (two heads) is about 1,100 tons per day. A complete machine shop, and a boiler house containing a battery of 200 horsepower water-tube boilers have been built. The pump house, which is owned and operated jointly by the Wolverine and Mohawk, has a 20,000,000 gallon Snow pump, and also an 8,000,000 gallon Nordberg pump, which is used as an auxiliary. Rock is transported to the mill by the Mohawk & Traverse Bay Railroad.

Capital stock.—Authorized, $1,500,000; par, $25, on which $13 per share has been paid. Dividends have been paid A and O 1, as follows: 1898, $1; 1899, $3.50; 1900, 1901, and 1902, $4 each; 1903, $5.50; 1904, $7.50; 1905, $11; 1906, $17; 1907, $17.50 1908, 1909, and 1910, $10 each; 1911, $9; 1912, $10; April, 1913, $5.

Development work, etc., years ended June 30.

Year.	Sinking shafts.	Drifting and cross-cutting.	Total openings.	Stoping.
	Feet.	*Feet.*	*Feet.*	*Fathoms.*
1906	358	4,419	4,778	23,252
1907	450	4,993	5,443	23,175
1908	414	4,841	5,255	23,817
1909	321	4,631	4,951	23,869
1910	191	4,948	5,139	25,440
1911	436	4,718	5,154	26,061
1912	541	4,293	4,834	25,845

Operations, years ended June 30.

Year.	Production of refined copper.	Yield of copper per ton of rock.	Cost per ton of rock.	
			Hoist.	Stamp.
	Pounds.	*Pounds.*		
1906	9,681,706	28.32	$1.49	$1.54
1907	9,372,982	27.24	1.58	1.65
1908	9,356,123	26.82	1.62	1.71
1909	9,995,748	26.75	1.52	1.60
1910	9,757,101	24.96	1.55	1.61
1911	9,617,168	24.75	1.59	1.64
1912	9,408,960	23.45	1.53	1.58

Income account, years ended June 30.

	1906–7	1907–8	1908–9	1909–10	1910–11	1911–12
Proceeds of copper	$2,002,379	$1,231,223	$1,334,056	$1,291,528	$1,209,747	$1,327,031
Interest	15,198	13,221	8,326	2,671	1,271	.....
Total receipts	2,017,577	1,244,444	1,342,382	1,294,199	1,211,018	1,327,031
Expenses	669,037	685,042	692,337	720,394	723,123	713,850
Construction	42,137	.....	44,904	2,939	2,191	.....
Dividends	1,140,000	750,000	600,000	600,000	600,000	540,000
Balance	[1] 166,403	[2] 190,598	[1] 5,141	[2] 29,134	[2] 114,296	[1] 73,181
Previous surplus	989,186	1,002,227	811,629	816,769	787,635	673,339
Total surplus	1,155,589	811,629	816,770	787,635	673,339	746,520

[1] Surplus. [2] Deficit.

Assets and liabilities, June 30, 1912.—Assets: Cash in bank, $10,207; deposit in trust company, $250,000; copper bills and copper on hand, $451,121; cash and supplies at mine, $44,358; stock in Michigan Smelting Co., $80,000; accounts receivable, $4,642; total, $840,328. Liabilities: Indebtedness at mine, $67,632; accounts payable, $26,176; total, $93,808. Excess of assets, $746,520.

Officers and directors.—Joseph E. Gay, president; J. R. Stanton, treasurer; J. W. Hardley, secretary; E. B. Hinsdale, Samuel L. Smith.

APPENDIX III.

Capital Paid in, Dividends, and Cost of Production of Lake Superior Mines.

[From Report of Strike Investigation by the Committee of the Copper Country Commercial Club of Michigan, 1913.]

COST OF PRODUCTION.

The following tables (as far as the committee has been able to complete them) show in detail the average copper contents per ton of rock, of the rock mined by the various companies during the year 1912, the number of pounds of refined copper produced in 1912, the amount of money paid out in wages to employees, and the average cost per pound of copper produced:

Company.	Average copper contents per ton of rock mined.	Pounds of refined copper produced.	Amount paid in wages.	Cost of production per pound of copper.
	Pounds.			*Cents.*
Mohawk Mining Co	13.81	11,995,598	$765,820.06	10.61
Ahmeek Mining Co	25.229	16,455,769	543,817.37	7.85
Allouez Mining Co	16.56	5,525,455	163,615.68	13.52
Osceola Consolidated Mining Co				10.36
Osceola mine	12.8	1,479,642	135,097.27	
North Kearsarge mine	12.8	8,611,720	438,226.13	
South Kearsarge mine	18.2	8,322,025	255,585.54	
Stamp mill			142,659.68	
Wolverine Copper Mining Co	21.86	9,120,485	378,875.75	8.665
Centennial Copper Mining Co	16.36	1,742,338	60,591.70	13.46
Calumet & Hecla Mining Co	24.18	67,856,429	3,983,013.05	9.86
Tamarack Mining Co	18.76	7,908,745	633,842.19	13.15
La Salle Copper Co			3,614.71	(1)
Laurium Mining Co			27,183.49	(1)
Franklin Mining Co	9.8	1,710,651	219,724.95	
Oneco Copper Mining Co			21,501.76	(1)
Hancock Consolidated Mining Co			141,123.34	(1)
Quincy Mining Co	15.73	20,634,800	1,436,781.90	11.48
Isle Royale Copper Co	15.43	8,186,957	555,205.55	11.89
Superior Copper Co	22.76	3,921,974	164,220.57	12.75
Copper Range Consolidated Co			2,208,537.62	
Baltic Mining Co	20.50	13,373,961		
Trimountain Mining Co	19.04	6,980,713		
Champion Copper Co	22.50	17,225,508		
Winona Copper Co	12.73	2,307,237	297,371.03	
Total		213,360,007	12,606,409.34	

[1] No copper production during 1912; exploratory and development work only.

The average price of copper per pound, over a period of 20 years, from 1891 to 1910, as given by Stevens's Copper Handbook, is 13.768 cents per pound.

DIVIDENDS AND ASSESSMENTS OF LAKE SUPERIOR MINES.

Of the above mining companies in the district seven paid dividends during the year 1912, namely: Mohawk Mining Co., Ahmeek Mining Co., Wolverine Copper Mining Co., Calumet & Hecla Mining Co., Osceola Consolidated Mining Co., Quincy Mining Co., and Copper Range Consolidated Mining Co. The Isle Royale Copper Co. in 1913 paid one dividend of $1 per share, being the first dividend since its operation, which commenced previous to 1860.

In view of the claim that has been made that the Lake Superior copper district is the richest in the world, the following table, taken from Stevens's Copper Handbook, will be of interest. The table lists something over 70 mining companies that have operated in the Lake Superior copper district from 1849 to 1910. Of the entire

list only 14 mines have paid back the money invested. If the Calumet & Hecla Mining Co. is taken from the list, the table will show that in all those years the copper industry has just about paid back the money invested in it:

Company.	Assessments.	1849–1910 dividends.	Debit balance.	Credit balance.
Adventure Consolidated	$2,450,000		$2,450,000	
Albany & Boston	840,000		840,000	
Arcadian	1,800,000		1,800,000	
Arnold	810,000		810,000	
Baltic	1,800,000	6,550,000		$4,750,000
Bohemian	180,000		180,000	
Calumet & Hecla	1,200,000	112,500,000		111,300,000
Centennial (Old)	1,135,000		1,135,000	
Centennial (New)	1,755,000		1,755,000	
Central	100,000	2,130,000		2,030,000
Champion	2,500,000	6,600,000		4,100,000
Cliff (Old)	111,000	2,518,620		2,407,620
Conglomerate	1,300,000		1,300,000	
Copper Falls	1,000,000	100,000	900,000	
Copper Range Consolidated	2,300,000	10,756,526		8,456,526
Delaware	2,000,000		2,000,000	
Elm River	1,200,000		1,200,000	
Evergreen Bluff	225,000		225,000	
Flint Steel	264,000		264,000	
Franklin	1,020,000	1,240,000		220,000
Hancock	1,800,000		1,800,000	
Humboldt	120,000		120,000	
Huron	240,000		240,000	
Indiana (Old)	200,000		200,000	
Isle Royale	2,750,000		2,750,000	
Kearsarge	180,000	160,000	20,000	
Keweenaw	2,800,000		2,800,000	
King Philip	800,000		800,000	
Lake	300,000		300,000	
La Salle	1,000,000		1,000,000	
Mass Consolidated	2,100,000		2,100,000	
Mayflower	800,000		800,000	
Michigan	2,000,000		2,000,000	
Miners	2,000,000		2,000,000	
Minnesota	456,000	1,820,000		1,364,000
Mohawk	1,800,000	2,150,000		350,000
National	350,000	320,000	30,000	
New Arcadian	75,000		75,000	
Nonesuch	400,000		400,000	
Northwest	283,000		283,000	
Norwich	230,000		230,000	
Ohio Trap Rock	150,000		150,000	
Oilbway	1,008,000		1,008,000	
Old Colony	1,100,000		1,100,000	
Osceola	1,700,000	9,343,250		7,643,250
Pennsylvania	126,000		126,000	
Peninsula	400,000		400,000	
Pewabic	585,200	1,000,000		414,800
Phœnix (Old)	1,037,500	20,000	1,017,500	
Phœnix Consolidated	1,350,000		1,350,000	
Quincy	200,000	19,302,500		19,102,500
Rhode Island	1,000,000		1,000,000	
Superior	100,000		100,000	
Tamarack	780,000	9,420,000		8,640,000
Tamarack Junior	640,000		640,000	
Tecumseh	500,000		500,000	
Trimountain	2,000,000	800,000	1,200,000	
Tollie	500,000		500,000	
Victoria	1,200,000		1,200,000	
Winona	2,200,000		2,200,000	
Wolverine	780,000	6,300,000		5,520,000
Wyandot	1,000,000		1,000,000	
Miscellaneous	10,000,000		10,000,000	
Total	79,565,700	194,120,896	61,843,500	176,298,696

REPORT OF JOHN B. DENSMORE, SOLICITOR OF THE DEPARTMENT OF LABOR, DETAILED AS COMMISSIONER OF CONCILIATION, ON HIS EFFORTS TO SECURE A SETTLEMENT OF THE STRIKE.

DEPARTMENT OF LABOR,
OFFICE OF THE SOLICITOR,
Washington, January 9, 1914.

The SECRETARY OF LABOR:

Pursuant to directions contained in your letter of December 26, 1913, I proceeded on that day to Calumet, Mich., for the purpose of attempting to settle the industrial dispute between the copper-mine operators and their men. For the purpose of ascertaining how difficult or easy might be the task of negotiating a settlement, I made an effort to obtain accurate information as to the number of men still on strike. From information given me by both operators and miners I concluded there were between six and seven thousand of the old employees still idle.

Approximately 15,000 men were employed just prior to the strike. On January 1, 1914, a statement from the operators shows 8,000 former employees at work; the statement from the strikers' officials shows benefits on that date being paid to 7,500 members of the union who are idle.

My negotiations with the striking miners were conducted through Judge H. U. Hilton, general counsel of the Western Federation of Miners, and Claude Taylor, president of the Michigan Federation of Labor. These gentlemen were in immediate charge of the strike during the absence of President Charles H. Moyer.

The original demands of the union were as follows:

1. A demand for the recognition of the Western Federation of Miners.

2. A demand for either the abolishment of the one-man drill or the working of two men on each drill.

3. A demand for a minimum wage of $3 for trammers and $3.50 for miners.

4. A demand for an eight-hour working day.

GRIEVANCES.

1. The claim that men are not treated with justice and decency by the petty bosses employed in the mines.

2. That the men have no adequate way of presenting grievances to the various mining managers without incurring the displeasure of the minor bosses, and undergoing discrimination and possible discharge for making complaints.

From Judge Hilton and President Taylor, representing the strikers, I obtained authority to make a settlement on the following basis:

1. That the miners be given an opportunity to present grievances through a committee.

2. That the wages and hours—$3 minimum and 8¾ hours, proposed by the operators in notice posted by them on December 1, 1913, as a modification of the original demands, go into effect at once.

3. That the miners be taken back to work without discrimination on account of their membership in any union.

4. That there be no discrimination on account of membership in any union after they had returned to work.

The proposal did not require nor demand recognition of any union or organization, nor the signing of any agreement or contract by the operators with the Western Federation of Miners, nor its officials, national or local, nor with any individual employee, or at all.

For the purpose of bringing all the influence possible to bear upon the operators in urging this plan of settlement, I requested a conference with a committee of citizens representing all the public in the strike zone. This committee, composed of business men, bankers, and professional men from Houghton, Hancock, and Calumet, representing the Copper Country Commercial Club and Citizens' Alliance and the public, met me in conference, and heard my plan of settlement. After a discussion lasting six hours, during which every possible angle of the situation was discussed, and the distressing contingent possibilities attending a continuance of the conflict considered, the committee stated that they would not only refuse to urge the plan of settlement upon the operators, but would seriously object to the operators making any settlement that included the taking back of any old employees or others who were members of the Western Federation of Miners unless he first renounced his union, turned in his card to the company, and signed an agreement not to join or belong to the union.

I then proposed that the operators post notices at the mines to the effect that all miners who so desired would be taken back to work without discrimination. This offer of settlement was also refused on the same ground and for the same reason.

There being no possibility of obtaining the large influence of the citizens' committee behind my plan, the following day I presented the same plan to all the mine managers in conference. The plan was refused by the managers, collectively and individually, with unalterable determination. I was also told by them that no man who had ever been a member of the union could be employed without first separating himself from the Western Federation of Miners by turning into the company's office his union card and signing an agreement not to join or belong to the union. I was told that they would never, under any circumstances, either directly or indirectly, recognize the Western Federation of Miners, permit one of its members to work in the mines, or in any manner treat with them, individually or collectively.

My plan of settlement having failed, I asked the operators to propose a plan. They proposed to take back all the men for whom places could be found if the men would surrender their union cards and sign an agreement not to belong to or join the union. They also

proposed that I, as a representative of the United States, conduct a ballot of the men on strike on the question of returning to work on the operators' plan. This vote in effect would be to determine whether the strikers desired to renounce their union. The operators proposed this ballot because they stated they were convinced that the majority of the strikers desired to go to work, regardless of the union, and were only prevented from doing so through fear. As I was without authority to conduct such a ballot, except through the recognized representatives of the strikers, I laid the proposition before the strike leaders.

For the reason that the operators had no offer of any kind to make based upon the result of such vote—that is, they would not agree to treat or arbitrate should the vote disclose a determination to remain on strike—this proposal did not meet with the approval of the strike leaders.

The leaders of the strikers then advised me they had conceded all they could; that the only remaining concession the strikers could make was to give up their union cards and their right to belong to the union for a chance to work. This they refused to do. There being no remote possibility of a settlement on the basis above described, and no possibility of recession on the part of the operators or striking miners, my efforts to restore peace came to an end.

Very respectfully,

J. B. DENSMORE, *Solicitor.*

REPORT OF JOHN A. MOFFITT, IMMIGRANT INSPECTOR, DETAILED AS COMMISSIONER OF CONCILIATION OF THE DEPARTMENT OF LABOR, ON HIS EFFORTS TO SECURE A SETTLEMENT OF THE STRIKE.

WASHINGTON, D. C., *November 21, 1913.*

Hon. WILLIAM B. WILSON,
Secretary United States Department of Labor,
Washington, D. C.

DEAR SIR: I desire herewith to submit a report of my efforts, as special representative of the United States Department of Labor, to adjust the strike in the copper fields of the northern Michigan Peninsula.

Relative to the strike in the copper fields of Michigan and in furtherance of the department's desire to bring about an adjustment of this labor difficulty by mediation, conciliation, or arbitration, I proceeded to Boston, pursuant to your oral instructions, and on September 2 last sought the good offices of Mrs. Glendower Evans, at her residence, 10 Otis Place, to bring about a conference between the officers of the Calumet & Hecla Copper Co. in that city and your representative, Mrs. Evans, besides being a stockholder in the company, having devoted a great deal of her time in the past to the improvement of the condition of the wage earner.

A meeting was arranged at the offices of the company, No. 12 Ashburton Place, Boston, Mass., on September 5, 1913, with Mr. Quincy A. Shaw, president; Mr. Rudolph Agassiz, vice president; and Secretary-Treasurer Flagg.

Messrs. Shaw and Agassiz dwelt at some length on the connection of the Western Federation of Miners with other labor difficulties, but Mrs. Evans and your representative finally secured Mr. Shaw's assent to meet committees of the employees who were on strike and of the employees who were not on strike, with the proviso, however, that members of the federation should be excluded from membership on either committee. Mr. Shaw further stated at that time that he intended to visit Calumet within a week or two, presumably with a view to bringing about some adjustment of the difficulty.

I had the honor of communicating to you orally at Washington on September 10 last Mr. Shaw's clearly expressed willingness to meet committees of the employees who were not connected with the federation, and you thereupon directed me to proceed to Calumet to confer with Mr. James McNaughton, the general manager of the Calumet & Hecla Co. and its subsidiary companies, with a view to bringing about, if possible, a conference between the respective representatives of the mine operators and the striking miners, using President Shaw's statement as the basis for such a conference.

Arriving at Calumet on the morning of the 13th instant, I had Mr. Walter Palmer, of the Bureau of Labor Statistics, arrange a meeting for me with Mr. McNaughton for 10 o'clock in the morning of the 15th instant, at the office of the Calumet & Hecla Co. Mr. Palmer accompanied me to this meeting where we met Mr. McNaughton and one of the attorneys for the mine managers, a Mr. Petermann. I discussed the strike situation at some length with Mr. McNaughton, and upon the conclusion of said discussion, tendered the good offices of the Department of Labor to bring about, if possible, an adjustment of the trouble. Mr. McNaughton asked how I proposed to do that. I said by mediation or arbitration. He said as to the former they (meaning his companies) wanted no "go between," and as to the latter he knew of nothing to arbitrate. He further stated that Mr. Palmer had already offered the good offices of the Department of Labor, which were declined, and that would be his answer to me. I thereupon requested him to meet a committee of his men on strike, informing him at the same time that I had consulted Mr. President Shaw and other officers of the Calumet & Hecla Co. at their offices in Boston, and that Mr. Shaw had expressed a willingness to meet committees of the men, provided the Western Federation officials were not represented on these committees. He said he knew of my having been to Boston, and that he and Mr. Shaw thoroughly understood each other. Mr. McNaughton then said that, while he would meet a committee of the men on strike, he first wanted to know how such committee would be appointed. I replied by stating that in my opinion the fairest way would be to call the men on strike together in meeting and allow them to select their own committee, thereby eliminating the influences of the so-called objectionable federation officials. Mr. McNaughton said that he would reserve the right to pass upon the personnel of such a committee when appointed, and if any of them were objectionable to him, he would refuse to meet them.

He further stated that no matter what the outcome of a meeting with a committee would be, he was determined that the men would return to work upon individual application and in no other way, and that those given employment would first be obliged to sign a paper to the effect that they did not hold membership in the Western Federation of Miners, or would not while in the employ of the Calumet & Hecla and their subsidiary companies. Mr. McNaughton then reviewed the occurrences that led up to the strike, dwelling at some length on the history of the Western Federation of Miners, and in so doing expressed a determination never to confer with the local or general officers, or the individual members of the federation "for the purpose of adjusting the strike or for any other purpose." At this point I suggested that should the Western Federation of Miners waive claim to recognition of their union, would he then meet a committee of his employees on strike. His reply to this was: "Oh, no. They can't work that on me—form a local organization and subsequently join the Western Federation." I then expressed regrets at being unable to have Mr. McNaughton meet his employees, and thereupon decided to call upon all the mine managers (nine in number) of the copper fields individually.

On the morning of September 16 I called at the headquarters of the miners at Calumet, where I was permitted to interview those in

charge of the strike, including the officers of the Western Federation of Miners. After talking over the strike situation for some little time, I tendered to them the good offices of the Department of Labor to negotiate a settlement of the strike. (For miners' reply see attached letter, marked "Exhibit A.")

On the afternoon of September 16 I took up my work of meeting the mine managers individually by calling upon Mr. Theodore Dengler, manager of the Mohawk and Wolverine mines, at his home in Wolverine, where I was cordially received. I explained my mission to Mr. Dengler, who appeared to be very much interested, and when I explained to him my purpose for calling upon the managers individually he suggested that to meet the managers I would be obliged to cover a large territory, and further suggested that it was just possible that he could get the managers together in meeting for me at Houghton on the following morning, September 17, but in order to be sure he would phone me at my hotel the same evening. I accepted his kind offer, believing I could accomplish more by meeting them collectively. This meeting was held at the Houghton Club at Houghton on the morning of September 17. All the mine managers, including Mr. McNaughton, were present; also their attorneys, Messrs. Reiss and Petermann. After a general discussion of the strike situation had concluded, I offered, either individually or collectively, the good offices of the Department of Labor and presented each of them with copies of two propositions as a basis for the settlement of the strike. (Propositions herewith attached and marked "Exhibit B.")

As to their acceptance or rejection of the good offices of the department, nothing was said, but on reading the propositions Attorney Reiss suggested that there were several new elements contained in the propositions that would have to be considered, and desired to know whether I cared to discuss them informally or wished a formal reply. My answer to this was that, if agreeable to the mine managers, an informal discussion of them could be had, but that I also desired a formal reply. This appearing to be satisfactory, and in fact so expressed by Attorney Reiss, a general discussion ensued, which lasted upward of two hours, and during which the mine managers were insistent to know the actual number or the approximate number of the miners that voted to strike, and requested our Mr. Palmer and myself to ascertain, if possible, this information for them, which we agreed to do. Attached herewith is a copy of our findings, marked "Exhibit C," copy of which was forwarded by special delivery to each of the mine managers.

On the evening of September 20 Mr. Petermann, of counsel for the mine operators, called at my hotel and handed me a paper containing the reply of the mine managers to the propositions presented to them. (See attached paper, marked "Exhibit D.") In this connection I desire to further report that Mr. Petermann when handing me this paper said that the mine managers were determined to drive the Western Federation of Miners out of the copper fields, if they had to fight all winter to do so. I suggested that, if such was the attitude of the mine managers, the price exacted seemed to me inhuman, as there would unquestionably be terrible suffering, particularly amongst the women and children in such a cold country. To this he replied that the price paid made no difference to him. Believing that I had

exhausted all means in my power to effect an adjustment of the strike, I returned to Washington, and on September 24 I again had the honor of communicating to you orally the result of my efforts at Calumet. You thereupon directed me to get into communication with Congressman Andrew J. Peters, of Massachusetts, with whom you had already arranged to use his good offices with the officers of the Calumet & Hecla Copper Co. at Boston, to further try to effect a settlement of the strike at that point. Mr Peters arrived in Boston on Thursday morning, October 1, called at the office of the Calumet & Hecla Co., and in an interview with Vice President Agassiz, arranged a meeting for us (Mr. Peters and myself) with the officers of the aforesaid company, for 10 o'clock in the morning on October 3.

At this meeting I told Mr. President Shaw of my mission to Calumet and the attendant results. I reminded him of his expressed willingness to meet committees of his employees on strike in our interview at Boston during the month of September. He said that he never agreed to meet committees of the Western Federation. I told him that the information I received at Calument was that, since the inauguration of the strike, the several thousand miners on strike had joined the Federation, and that in a communication from their representatives to me they waived all claims to act on any committees, and were perfectly willing to be represented by men not members of the Federation. Mr. Shaw desired to know who these men would be, and I suggested that two public-spirited men of the class of Mr. Peters, and, if agreeable to Mr. Peters, he (Mr. Peters) to be one of them. Mr. Shaw evidently did not take kindly to this proposition, as he would not consider it until such time as the matter could be taken up with the full directorate of the company, and he did not know when this could be done. Mr. Peters thereupon propounded a number of questions to Mr. Shaw, among which was the following:

Question: "Mr. Shaw, would you and two other directors of your company meet a committee of the men on strike if such a request was made of you?"

Answer: "Yes; provided, however, that the invitation to attend such a meeting would come through Mr. McNaughton, as I would do nothing over Mr. McNaughton's head."

See letter of October 7 to Mr. Shaw and answer thereto. (Herewith attached, marked "Exhibit E.") I then told Mr. Shaw that, as far as I could learn from the men on strike at Calumet, if he was to go there there would be no question of an immediate settlement of the trouble and that I was somewhat surprised to learn that he had been to Lansing, Mich., and did not go to Calumet, as I presumed in my first talk with him that that was his intention. To this he replied as follows: That to have done so would have encouraged the strikers to hope that the company would deal with their organization. He first expressed regret that the governor and the Federal authorities had offered their good offices at mediation, saying that these efforts merely encouraged the men to continue the strike, for had there been no interference he was sure the strike would have been settled long before this. In the few minutes' talk that followed I incidentally mentioned the fact that the atrocities committed by the so-called Waddell gunmen from New York, particularly in the case where a family of poor inoffensive foreigners were shot down in their own home, were to be deplored. In reply Mr. Shaw said that his

company employed some of those Waddell men and that there were two sides to every case. I then inquired what caused the great haste and how it happened that the State militia was entrained to the copper fields 12 hours after the strike occurred. While at Calumet I was informed by Gen. Abbey, who was in charge of the militia, that the strike started on July 23 and the soldiers were entrained on the 24th, and it was inconceivable to me, at least, how the militia could be made ready in so short a time, unless there had been some understanding with the governor before the strike actually took place. Mr. Agassiz replied to this by stating that the governor was called up on the phone, and the militia was consequently dispatched to the strike zone. This ending the conference, I returned to Washington, and, acting under your instructions, I forwarded a copy of Mr. Shaw's answer to Mr. Peters's question to the representatives of the men on strike at Calumet, requesting a reply containing their views on the proposition of meeting a committee of the directors of the Calumet & Hecla Co. On October 20 I received letter (herewith attached, marked "Exhibit F") from Mr. Charles Moyer, representing the striking miners.

On October 24 I dictated and mailed a letter to Mr. Quincy A. Shaw (herewith attached, marked "Exhibit G") inclosing a copy of Mr. Moyer's letter and requesting an answer thereto. On October 31 I received his of the 29th. (Attached hereto, marked "Exhibit H.")

Before concluding my report to you, I believe it my duty to call your attention to the fact that on July 15 a petition from the miners, requesting a conference with the mine managers to place before them a number of grievances for adjustment, was forwarded by registered letter to each of the several mine managers of the copper district. The receipts for such letters are herewith attached (marked "Exhibit I"), and will show that six of the mine managers received those petitions but took no action on them, and that Mr. Charles L. Lawton, general manager of the Quincy Mining Co., refused to accept the petition mailed to him, the same being returned and attached hereto. (Marked "Exhibit J.")

And I desire to advise you that upon investigation I am credibly informed from authoritative sources among the leaders of the strikers that "had the mine managers respected the petitions forwarded to them and met the miners in conference, the strike would have been averted; but when the petitions were ignored the only alternative the men had was to strike." I wish to further call your attention to the correspondence had with the representatives of the men on strike. (Exhibits A and F.)

This correspondence clearly indicates that the officials of the Western Federation of Miners waived all claim of recognition of their union by the mine managers.

In conclusion, I believe it but proper to report that every honorable effort was made by your representatives (Mr. Palmer and myself) to bring about an amicable adjustment of this industrial conflict, but without avail, and feel that this report would be incomplete if I failed to recognize the very valuable suggestions and advices given by you to your representatives in the conduct of their negotiations for a settlement of this strike.

Respectfully submitted.

JOHN A. MOFFITT,
Special Representative.

EXHIBIT A.

REPLY OF WESTERN FEDERATION OF MINERS TO PROPOSITIONS.

CALUMET, MICH., *September 17, 1913.*

Mr. JOHN A. MOFFITT,
Special Agent, Department of Labor, City.

HONORED SIR: The striking miners of the copper district of Michigan, through their representatives, gladly accept your good offices in attempting to negotiate a settlement with their employers. They welcome arbitration in the settlement of this dispute, and further consider that your proposed method of constituting the board, eliminating as it does all question of the recognition of the Western Federation of Miners, puts it above any reasonable objection on the part of the employers, while at the same time it meets with our hearty approval, to wit: That all differences shall be settled by a board of arbitration, said board to consist of five members, two of whom shall be chosen by the mine managers involved in the controversy, or whatever numbers may desire a settlement; two to be chosen by the strikers in mass meeting assembled for that purpose, the two so chosen not to be members of the federation; the fifth member of the board to be chosen by Hon. W. B. Wilson, Secretary of the Department of Labor. We shall accept the arbitrament of said board in all matters at issue and hope that it will enter upon its duties very soon.

Appreciating your efforts in behalf of industrial peace based on justice, we remain,

Faithfully, yours,

C. E. MAHONEY.
YANCO TERZICH.
GUY E. MILLER.

EXHIBIT B.

FIRST PROPOSITION.

HOUGHTON, MICH., *September 17, 1913.*

To the managers of the mines in the copper district of Michigan:

GENTLEMEN: As a special representative of the United States Department of Labor I offer for your immediate consideration the good offices of the department in bringing about an adjustment of the existing strike of the mine workers. These good offices of the department are offered to you collectively or separately for the purpose of mediation, conciliation, or arbitration, under existing conditions preferably the latter, to wit:

First. That all of the issues involved in the strike shall be settled by arbitration.

Second. That the board of arbitration shall be composed of five members.

Third. That two of the members shall be selected by the mine managers.

Fourth. That two of the members shall be chosen by the mine workers now on strike.

Fifth. That the latter two members shall not be members of the Western Federation of Miners.

Sixth. That the latter two members shall be selected at a meeting which all mine workers now on strike shall be invited to attend.

Seventh. That the fifth member shall be designated by the United States Secretary of Labor.

Eighth. That the decision of this board of arbitration shall be binding on both the managers and the mine workers now on strike.

If this proposal as a whole is not acceptable to you, I request that you indicate what part of the proposition is objectionable.

Respectfully submitted.

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

SECOND PROPOSITION.

HOUGHTON, MICH., *September 17, 1913.*

To the managers of the mines in the copper district of Michigan.

GENTLEMEN: With the view of adjusting amicably the differences between you and your former employees now on strike, I propose to you, collectively or separately, that you discuss these differences with a committee composed of such a number of

persons as you may suggest; that these persons shall be members of the Western Federation of Miners, or shall not be members of that organization, as you may prefer, and they shall be chosen at a meeting which all of the mine workers on strike shall be invited to attend.

Respectfully submitted.

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

EXHIBIT C.

MICHIGAN HOTEL,
Calumet, Mich., September 19, 1913.

To the managers of the mines in the copper district of Michigan.

GENTLEMEN: In compliance with the request that was made at your meeting in Houghton on the 17th instant, that I should ascertain, if possible, the number of votes cast by your employees in favor of a strike and the conditions under which the vote was taken, I desire to inform you that upon investigation at the union headquarters at Calumet and other points I gathered the following information:

That the executive board of the Federation of Miners was requested by the mine workers of this district to give their approval to holding a referendum vote on two propositions, which was granted, to wit:

(*a*) Asking for a joint conference of the mine managers and the employees.

(*b*) In case a joint conference should be refused, that a strike be called.

After the aforesaid request was granted, meetings of the men were held at their respective places of meeting in this district, and they were notified that on July 1 balloting would begin at the offices of the secretaries at the following places: Calumet, Ahmeek, South Range, Hancock, and Mass City, and that the polls would be open each day until July 12, from 8 o'clock in the morning until 6 p. m., and all the men were urged to vote.

Notice of said balloting was advertised in the local papers in foreign languages, and committees of the men were also sent to the various localities, to remind the men of the referendum. The polls were closed to voting at 12 o'clock noon on July 12, and a canvass of the votes showed that nearly 9,000 votes were cast, and of this number 98 per cent voted in favor of the aforementioned propositions.

Very truly, yours,

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

EXHIBIT D.

MINE MANAGERS' REPLY.

Hon. JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

DEAR SIR: The undersigned, being managers of the copper mines of the counties of Houghton and Keweenaw in the State of Michigan, desire to express to you their most sincere appreciation of your offer of the good offices of the department in bringing about an adjustment of the existing strike, involving part of the mine workers of our companies, submitted to us in yours of September 16.

The first offer submitted by you begins with the proposition: "That all of the issues involved in the strike shall be settled by arbitration."

The real issue involved in the strike is recognition of the Western Federation of Miners as an organization entitled to represent, through its officials, the mine workers of this district. This has been publicly announced in speeches and in print by the officials of that organization themselves.

In like offers of mediation made by the governor of Michigan, personally and through special representatives appointed by him and acting by his authority, we have heretofore definitely declined to treat with the Western Federation of Miners, either directly or indirectly. This conclusion was arrived at in the first instance because of the past history of the federation in its operations throughout the mining districts of the West; because it was and is our firm conviction that the domination of the employees of the mining companies by that federation would not be to the best interests of our employees themselves; and because the federation was entirely unjustified in attempting to speak as the representatives of our employees, for the reason that, according to our best information at the time of the inception of the strike, confirmed by all the information which we have obtained since then, not to exceed 25 per cent of the employees of the companies (and in many instances a much smaller percentage) were members of the

organization, and the large majority of our employees were not willing to be dominated by that organization.

It should also be recognized that because of the attitude of the officers, leaders, and organizers of the Western Federation toward the mining companies and their officials and employees there could not be a resumption of mutual relations of good will and confidence between employers and employees so long as the employees or any part of them are under the influence or domination of the federation. This should be apparent from the nature of the teachings and utterances of the officers, leaders, and organizers of the federation, as set forth in their published speeches and in their official publications.

All of the larger mines of the district have resumed operations with a large portion of the normal forces of their employees, who are entirely satisfied with conditions. In the case of the Calumet & Hecla, after deducting from the normal force those who are known to have removed from the district by reason of strike conditions or for other reasons, from 80 to 85 per cent of its employees have returned to work and are now engaged in their several occupations. Similar conditions (with varying percentages) exist at the other larger mines of the district which are now in operation.

Under these circumstances it is our judgment that we would be remiss in our duties toward the great majority of our employees if we should take any action which in any manner would recognize the Western Federation of Miners as the representatives of the mine workers or as dictating or dominating the actions of our employees, even to the extent of an arbitration as to their right to recognition or as to any other differences, real or fancied, which the federation may urge.

For these reasons, among many others which might be mentioned, we must adhere to our position that we will in no manner deal with the Western Federation of Miners, either directly, through mediation, arbitration, or in any other way.

The only issue involved at the time the strike was called by the Western Federation of Miners was our refusal to enter into any conference with a committee or representatives of the federation. The only demand that was made was for such a conference, with a statement that if we were not willing to meet the officials of the Western Federation it would be taken as proof that the situation could not be settled peaceably. We have had no other grievance submitted to us in any way, either officially or otherwise. This was not a grievance of our employees, but was a grievance of the federation, represented by their officials and organizers from other States, who are entirely unjustified in making any claim to a right to represent the employees of the mines of this district.

Both of your propositions, as submitted by you, involve arbitration or discussion by or with committees, a part of whom are to be chosen "by the mine workers now on strike."

The mine workers now on strike are those only who are members of the Western Federation of Miners. As above stated, they constitute but a small part of our employees. No method of choosing or appointing arbitrators or committees by "the mine workers now on strike" could be devised in which such choice will not be the direct choice of the Western Federation of Miners, as such, and with that federation we will have no dealings of any kind.

It can not be too definitely understood with relation to the present situation that the mining companies can not and will not in any manner recognize or deal with the Western Federation of Miners. They do not represent our employees, but on the contrary, under present conditions, they stand between the employers and the employees as the only bar to a satisfactory and amicable adjustment of all existing differences.

Because of this situation and without any lack of full appreciation of the efforts of yourself and the Department of Labor, we feel that it is necessary to say to you that we can not accept any plan of mediation or arbitration between the mine employers and "the mine workers on strike," which is but another designation for the Western Federation of Miners.

But we beg to suggest to you, in view of the situation as above stated and as it exists in the counties of Houghton and Keweenaw at this date, that if you should use your personal influence and the influence of the Department of Labor to induce the officials, organizers, and leaders of the Western Federation of Miners to come to a full realization of the futility of any attempt to secure recognition in this district or to retain a standing therein which would permit them to remain as a factor of influence among our employees or any portion thereof, and to withdraw themselves and their influence from the present situation and from the district, there would then be nothing in the way of an early adjustment of any differences or grievances, if they exist, between the employers and their employees. In this way and in this way only can the present deplorable condition be remedied or adjusted.

Since the inception of the strike it has been stated in published speeches of the officials of the Western Federation of Miners that they demanded an eight-hour day, abolition of the one-man drill, and a minimum wage of $3 per day for all employees. No grievances of that kind were stated or submitted to the companies in any form.

As to the working hours, it may be stated to you, as was stated to Judge Murphy, who was here on a similar mission in behalf of the governor of Michigan, that for some time prior to the inception of the strike there has been under consideration by the several companies the institution of an eight-hour day for underground employees, so far as that rule could be made practicable. The present strike situation does not alter the intention of the companies in that regard. It is known to the companies that a large number of their underground employees do not want the eight-hour day, and are opposed to it, but we will state to you that if the eight-hour day for our underground employees is desired by them, or a sufficient majority of them, it has been and will continue to be given favorable consideration.

The one-man drill question is purely and simply a manufactured grievance. We know it to be the fact that those who operate these drills do not want them abolished. The continuation of the mining industry in this district requires the use and application of every modern appliance for the reduction of cost. It is made necessary by the low copper contents of the rock and the expenses of deep mining, as compared with the higher production of other competing districts. The one-man drill is an economic necessity which has come to stay. The conditions of its use have been prescribed by the legislature, and the question of its abolition is one which could not be submitted to arbitrators.

As to the minimum-wage question, the conditions at the different mines vary to such a large extent that no scale can be adopted applicable to all the different conditions. This has been impossible in the past and will continue impossible in the future, and would be as unfair to the laborers themselves as to the companies.

We greatly regret that the situation is such as to render the plan of arbitration or of conference with a committee or with representatives of the Western Federation of Miners an impossibility to us. With the elimination of that organization, arbitration or mediation would become wholly unnecessary, as we are convinced that there would be no difficulty in adjusting satisfactorily all questions that might arise between our employees and the respective companies by whom they are employed.

Dated at Houghton, Mich., September 20, 1913.

Very respectfully,

JAS. MACNAUGHTON.
F. W. DENTON.
J. L. HARRIS.
THEO. DENGLER.
R. R. SEEBER.
ENOCH HENDERSON.
CHAS. L. LAWTON.

The following mines are represented by the above signatures:

Mr. James MacNaughton is general manager of the Calumet & Hecla Mining Co., Ahmeek Mining Co., Allouez Mining Co., North Kearsarge Mine, South Kearsarge Mine, Tamarack Mining Co., Osceola Consolidated Mining Co., Laurium Mining Co., La Salle Copper Co., Isle Royale Copper Co., Superior Copper Co., St. Louis Copper Co., and Centennial Copper Mining Co.

Mr. F. W. Denton is general manager of the Baltic Mining Co., Champion Copper Co., and Trimountain Mining Co.

Mr. Charles L. Lawton is general manager of the Quincy Mining Co.

Mr. Theo. Dengler is agent of the Wolverine Copper Mining Co. and Mohawk Mining Co.

Mr. J. L. Harris is general manager of the Hancock Consolidated Mining Co. and Oneco Copper Mining Co.

Mr. R. R. Seeber is superintendent of the Winona Mining Co. and Houghton Copper Co.

EXHIBIT E.

DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington October 7, 1913.

QUINCY A. SHAW, Esq.,
12 Ashburton Place, Boston, Mass.

DEAR SIR: As my report to Secretary Wilson, of the United States Department of Labor, of the interview Congressman Peters and I had with you and Mr. Agassiz at your office at Boston, is in the course of preparation, and in order to have said report

as nearly correct as possible, I desire to ask if I quote you properly in the following answer to a question propounded by Mr. Peters:

Question by Mr. Peters: "Mr. Shaw, would you and two other directors of your company meet a committee of the men on strike if such a request was made of you?"

Answer by Mr. Shaw: "Yes; provided, however, that the invitation to attend such a meeting would come through Mr. MacNaughton, as I would not do anything over Mr. MacNaughton's head."

An early reply will be inexpressibly appreciated by,

Yours, very truly,

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

CALUMET & HECLA MINING CO.,
Boston, Mass., October 10, 1913.

JOHN A. MOFFITT, Esq.,
Special Representative United States Department of Labor,
Office of Secretary, Washington, D. C.

DEAR SIR: I beg to acknowledge your letter of October 7, which I only received this morning on my return from a trip to Buffalo and New York.

You have correctly given my answer to Mr. Peters's question, except that there should be added to the answer my statement at that morning's meeting that I would not meet a committee of our former employees if any members of the Western Federation of Miners were on such a committee and, furthermore, I stated that there were many men formerly in our employ who have participated, and are continuing to participate, in acts of violence, who, in our opinion, are of a type of man whom we will not again knowingly employ, and that if any of these were on the committee I should reserve the right as to whether or not I should see the committee.

Yours, very truly,

QUINCY A. SHAW, *President.*

OCTOBER 15, 1913.

Mr. CHARLES MOYER,
President Western Federation of Miners, Calumet, Mich.

DEAR SIR: On the morning of the 4th instant Congressman Andrew J. Peters, of Massachusetts, and I had a meeting with Messrs. Quincy A. Shaw, president; Rudolph Agassiz, vice president; and George A. Flagg, secretary-treasurer, of the Calumet & Hecla Mining Co., at the offices of said company, 12 Ashburton Place, Boston, Mass., where we urged these gentlemen to agree to meet committees representing their men now on strike in the copper fields of Michigan; in fact, we pointed out to them that, in our opinion, it was their duty to meet their men and try and effect an amicable adjustment of the present strike. After a two-and-a-half hour discussion of the conditions obtaining in the copper fields of Michigan, at least as I saw them, Congressman Peters propounded a number of what might be termed "acute" questions to Mr. Shaw, one of which I herewith inclose a copy.

In preparing my report to Secretary Wilson of this meeting, and in order to have same correct, on the 7th instant I forwarded the question and answer to Mr. Shaw for verification, and on the 10th instant I received his answer, a copy of which is herewith inclosed.

I therefore desire that after a careful perusal of the said questions and answers thereto, you will let me know the position of the men on strike. As to Mr. Shaw's reply, I might further say that our files here in Washington will be incomplete until we receive your answer to the propositions under cover.

Anticipating an early reply, believe me,

Very truly, yours,

JOHN A. MOFFIT,
Special Representative, United States Department of Labor.

EXHIBIT F.

CALUMET, MICH., *October 18, 1913.*

JOHN A. MOFFITT,
Special Representative, United States Department of Labor,
Washington, D. C.

DEAR SIR: In reply permit me to say that we know of no men on strike who are not members of the local unions of the Western Federation of Miners. It is agreeable to us that a committee selected by the men on strike shall meet Mr. Shaw and two

other directors of the Calumet & Hecla Mining Co., at any time Mr. Shaw and said directors express a willingness to meet them.

We further agree that if Mr. Shaw and the directors should make any concessions to the demands of the men on strike and that a referendum vote will be taken to determine whether the same shall be accepted.

It is further agreeable that no representative of our international organization shall serve on said committee.

Very truly,

CHAS. H. MOYER,
President Western Federation of Miners.

CALUMET, MICH., *October 18, 1913.*

Mr. JOHN A. MOFFITT,
Special Representative, United States Department of Labor,
Washington, D. C.

DEAR SIR: I beg to acknowledge receipt of yours of the 14th instant, inclosing a question propounded by Congressman Andrew J. Peters, of Massachusetts, to Mr. Quincy A. Shaw, president of the Calumet & Hecla Mining Co., at a meeting held at the office of said company on the morning of October 4, and have carefully noted your request for an answer from me to the proposition submitted by Mr. Shaw.

As I understand the question submitted by Mr. Peters was as follows:

"Mr. Shaw, would you and two other directors of your company meet a committee of the men on strike if such a request was made of you?" Answer of Mr. Shaw: "Yes; provided, however, that the invitation to attend such a meeting would come through Mr. McNaughton, as I would do nothing over Mr. McNaughton's head."

And that on October 10, in answer to an inquiry from you, addressed to Mr. Shaw, asking him if you had quoted him properly, he stated that he had been correctly quoted, but that it was his desire to have added to the answer that he would not meet a committee of former employees if any members of the Western Federation of Miners were on such a committee.

In reply permit me to say that we know of no men on strike who are not members of the local unions of the Western Federation of Miners. It is agreeable to us that a committee, selected by the men on strike, shall meet Mr. Shaw and two other directors of the Calumet & Hecla Mining Co., at any time Mr. Shaw and said directors express a willingness to meet them.

We further agree that if Mr. Shaw and the directors should make any concessions to the demands of the men on strike, that the committee will refer the same back to the men on strike and that a referendum vote will be taken to determine whether the same shall be accepted.

It is further agreeable that no representative of our international organization shall serve on said committee.

Believing that an adjustment of this deplorable situation would result should such a conference be held, and assuring you of our earnest desire to do anything within reason to that end, I am,

Very truly,

CHAS. H. MOYER,
President Western Federation of Miners.

EXHIBIT G.

UNITED STATES DEPARTMENT OF LABOR,
IMMIGRATION SERVICE,
Washington, D. C., October 24, 1913.

Mr. QUINCY A. SHAW,
President Calumet & Hecla Mining Co.,
12 Ashburton Avenue, Boston, Mass.

DEAR SIR: By direction of the Hon. W. B. Wilson, Secretary of the United States Department of Labor, I forwarded to the striking miners at Calumet, Mich., a copy of the result of the meeting held at your office at Boston, Mass., on the 4th instant, at which Mr. Agassiz, Congressman Peters, yourself, and I were present, requesting a reply to the suggestions contained therein.

On the 20th instant I received an answer, a copy of which I herewith inclose, and request that you give immediate consideration to the propositions contained in same, and kindly favor me with your conclusions in the matter as soon as is convenient for you to do so.

Very truly, yours,

JOHN A. MOFFITT,
Special Representative, United States Department of Labor.

EXHIBIT H.

CALUMET & HECLA MINING CO.,
Boston, Mass., October 29, 1913.

Mr. JOHN A. MOFFITT,
Special Representative, United States Department of Labor,
Washington, D. C.

DEAR SIR: Upon my return from Philadelphia this morning I find your letter to me of the 24th instant inclosing copy of letter to you signed "Chas. H. Moyer, president W. F. of M." (president of the Western Federation of Miners).

I have repeatedly stated to you that we could have no negotiations with this organization.

Without, however, dwelling on this and the other considerations which in themselves would govern our action, I feel confident you will agree with me that the acts of lawlessness and violence of almost daily and nightly occurrence at the Michigan copper mines since our interview on the 4th instant make it impossible to consider the matters commented upon in his communication.

I take this opportunity of sending you, under separate cover, a half-dozen copies of the report made to Gov. Ferris by the committee appointed by the Copper Country Commercial Club to look into the conditions existing in the copper mines at Lake Superior.

Yours, truly,

QUINCY A. SHAW, *President.*

EXHIBIT I.

6 CH. BN.

HANCOCK, MICH.

Yours 157, 17th sgd. Dan Dullivan to Quincy Mining Co. Decline to accept. M. S. G.

R. G.—New York, N. Y., July 18–13.—10.10 p. m.

EXHIBIT J.

Letter No. 121.

P. O., Hancock, Mich.

Received for registration 7/15, 1913, from copper district, C. E. Hietala, Secy. union. Addressed to James MacNaughton, gen. mngr. of Calumet & Hecla Mining Co. 1st class postage prepaid. Postmaster, per T. W.

(Return receipt requested.)

[Face.]

Post Office Department. Official business. Original Reg. No. 121.

Return to C. E. Hietala, sec'y, Box 217, Hancock, Mich.

(Stamped:) Calumet Mich., July 15, 1913, 3.30 p. m.

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.

Date of delivery 7/15, 1913. Jas. MacNaughton. Frank Gillet, agent.

Letter No. 150.

P. O., Hancock, Mich.

Received for registration 7/16, 1913, from Copper Dist. Union, C. E. Hietala, sec'y, addressed to Mr. Richard M. Edwards, supt. Franklin Mng. Co., Houghton, Mich. 1 class postage prepaid. Postmaster, per T. A. W.

(Return receipt requested.)

Special delivery.

[Face.]

Special delivery.
Post Office Department. Official business. Original Reg. No. 150.
Return to C. E. Hietala, sec'y, Box 217, Hancock, Mich.
(Stamped:) Houghton, Mich., July 17, 1913, 10.30 a. m.

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, 7/17, 1913. R. M. Edwards.

[Face.]

Post Office Department. Official business. Original Reg. No. 148.
Return to C. E. Hietala, sec'y, Box 217, Hancock, Mich.
(Stamped:) Hancock, Mich., July 17, 1913, 4 p. m.

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, 7/17/13. Jno. L. Harris. Oscar Johnson, agent.

[Face.]

Post Office Department. Official business. Original Reg. No. 151.
Return to: C. E. Hietala, Sec'y, box 217, Hancock, Mich.
(Stamped:) Jul 17 1913

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, July 17, 1913. C. K. Hitchcock, jr.

[Face.]

Post Office Department. Official business. Original Reg. No. 142.
Return to: C. E. Hietala, Sec'y, Hancock, Mich.
(Stamped:) Painesdale, Mich., Jul 16 1913 1 p m

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, July 16, 1913. Fred. W. Denton. Fred W. Collick.

[Face.]

Post Office Department. Official business. Original Reg. No. 141.
Return to C. E. Hietala, secy., Hancock, Mich.
(Stamped:) Mass, July 16, 1913, 5 p. m.

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, 7/16/13. Elton W. Walker. E. F. S., agent.

[Face.]

Post Office Department. Official business. Original Reg. No. 140.
Return to C. E. Hietala, secy., Hancock, Mich.
(Stamped:) Mohawk, Mich., July 16, 1913, 5 p. m.

[Back.]

REGISTRY RETURN RECEIPT.

Received from the postmaster registered article, the original number of which appears on the reverse side of this card.
Date of delivery, 7/16, 1913. Mohawk Mining Co. F. H. Getchell, clerk.

Letter No. 140.
P. O., Hancock, Mich.
Received for registration 7/15/1913, from C. E. Hietala, sec'y, addressed to Frederick W. Denton, Painesdale, Mich. 1 class postage prepaid. Postmaster, per J. A. W.
(Return receipt requested.)
Letter No. 141.
P. O., Hancock, Mich.
Received for registration 7/15/1913, from C. E. Hietala, sec'y, addressed to Mohawk Mining Co., Mohawk, Mich.. 1 class postage prepaid. Postmaster, per J. A. W.
(Return receipt requested.)

Letter No. 142.
P. O., Hancock, Mich.
Received for registration 7/15/1913, from C. E. Hietala, sec'y, addressed to Elton W. Walker, Mass Cons. Mn'g Co., Mass City, Mich. 1 class postage prepaid. Postmaster, per J. A. W.
(Return receipt requested.)

[Face.]

Sent to Ipswich defense fund, Ipswich. Donation.

[Back.]

RECEIPT FOR U. S. POSTAL MONEY ORDER.

Dollars, 12. (Amount for which issued.)
(Stamped:) Hancock, Mich., July 15, 1913. M. O. B.

Special.
Letter No. 117.
P. O., Hancock, Mich.
Received for registration, 7/14, 1913, from Box 217, C. E. Hietala, sec'y, addressed to Mr. Chas. L. Lawton, general mngr. Quincy Mng. Co., Hancock, Mich. 1 class postage prepaid. Postmaster, per J. A. W.

[Sealed envelope.]

Registered No. 117.
(Addressed:) Mr. Chas. L. Lawton, general manager of the Quincy Mining Co., Quincy, Hancock, Michigan.
From C. E. Hietala, sec'y Copper District Union, Box 217, Hancock, Mich.
Return receipt requested.
(Written on face:) Refused.

[Back.]

(Stamped:) Hancock, Mich., July 14, 1913. Registered.

○

(Continued from 2d page of cover.)

ustrial Accidents and Hygiene.

No. 1. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories. (Bul. No. 104.)

No. 2. Hygiene of the painters' trade. (Bul. No. 120.)

No. 3. Dangers to workers from dust and fumes and methods of protection. (Bul. No. 127.)

Conciliation and Arbitration (including strikes and lockouts).

No. 1. Conciliation and arbitration in the building industries of Greater New York. (Bul. No. 124.)

No. 2. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements. (Bul. No. 133.)

Labor Laws of the United States (including decisions of courts relating to labor).

No. 1. Labor legislation of 1912. (Bul. No. 111.)

No. 2. Decisions of courts and opinions affecting labor, 1912. (Bul. No. 112.)

Foreign Labor Laws.

Miscellaneous Series.

No. 1. Statistics of unemployment and the work of employment offices in the United States. (Bul. No. 109.)

No. 2. Prohibition of night work of young persons. (Bul. No. 117.)

No. 3. Ten-hour maximum working day for young persons and women. (Bul. No. 118.)

No. 4. Employers' welfare work. (Bul. No. 123.)

Imprimerie Bussière, à Saint-Amand, (Cher), France

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U.S. Bureau of Labor Statistics
Michigan copper district strike

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